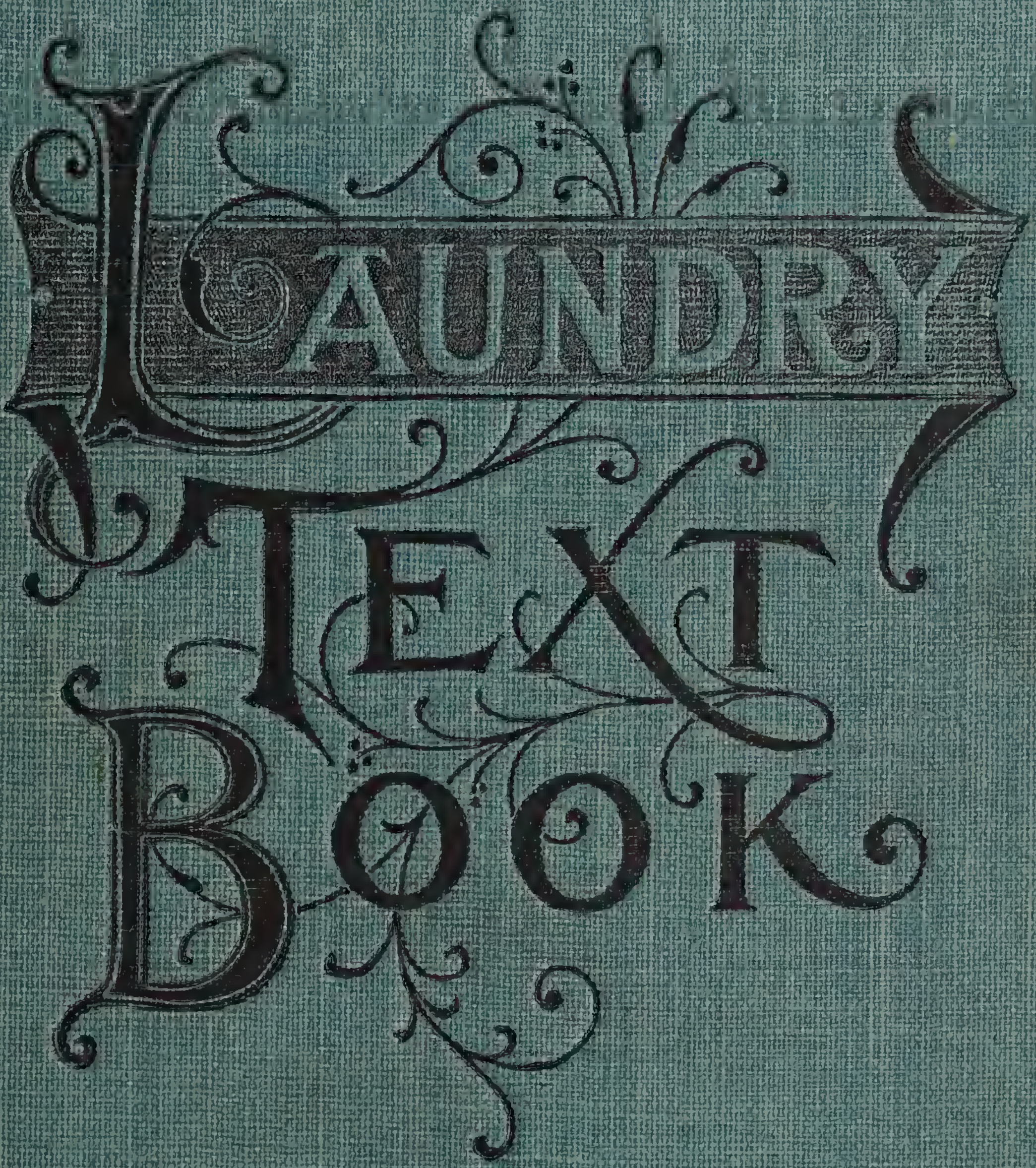


LAUNDRY TEXT BOOK

THE

LAUNDRY TEXT BOOK.

A CLASSIFICATION OF THE

BEST ARTICLES PUBLISHED IN

The National Laundry Journal

DURING 1898 AND 1899.

ARRANGED IN DEPARTMENTS AND CAREFULLY
INDEXED FOR READY REFERENCE.

THESE ARTICLES

ARE CONCERNING THE METHODS OF CONDUCTING THE LAUNDRY BUSINESS; MATERIALS USED AND HOW TO USE THEM, ADVERTISING, SANITATION AND VENTILATION; FIRE PREVENTION, PROTECTION AND INSURANCE; AND LAW ARE ALSO TREATED ON IN THEIR RELATION TO THE LAUNDRY BUSINESS.

PUBLISHED BY
THE NATIONAL LAUNDRY JOURNAL.

ENTERED AT THE OFFICE OF THE LIBRARIAN OF CONGRESS, 1901,
BY DOWST BROS.' CO., CHICAGO.

INTRODUCTORY.

THE remarkably hearty reception and unexpected demand for The Laundry Manual (it now being in its fifth edition,) assures us that this book will be welcomed by the readers and students engaged in the laundry business.

This volume differs from The Laundry Manual in that some of the articles are more abbreviated, or pruned of such verbiage as does not materially affect the purpose or intent, or lessen the value to the reader. This elimination, while necessary in order to include as many subjects and as much information as possible within a book of reasonable size, will at the same time give the reader the pith, meat or practical fruits of all the matter, with much less expenditure of time in reading.

CONTENTS.

The Laundry Business—In America .. .. .. 7 to 19
The Laundry Business—Abroad, ... 19 to 30
Laundry Machinery, ... 30 to 37
" Supplies, ... 37 to 49
" Agents and Agencies, ... 49 to 55
" Employes and their Management, ... 56 to 74
" Competition, Prices and Price-Cutting, .. 75 to 96
" Associations, ... 96 to 111
Location, ... 112 to 115
Equipment, ... 115 to 120
Marking and Sorting, ... 121 to 125
Washing, ... 126 to 155
Bleaching, ... 156 to 163
Removing Stains, ... 164 to 170
Bluing, ... 171
Starching, ... 171 to 192
Drying Room, ... 193 to 198
Ironing, ... 198 to 212
Miscellaneous. .. .. 212 to 241
Correspondence, ... 242 to 273
Business Management, ... 273 to 277
The Office—Books, Accounts, Etc. .. .. .. 277 to 289
" Wagon Work, ... 290 to 295
" Cash vs. Credit, ... 296 to 301
" Express Work, ... 302 to 306
Advertising, ... 307 to 328

Fire Prevention, ... 328 to 341
" Insurance, ... 342 to 384
Law, ... 385 to 400
The Engine Room, ... 400 to 427
Fuel, ... 427 to 434
Electricity, ... 434 to 439
Sanitation,.. .. .. 439 to 448
Ventilation, ... 449 to 458
Accidents, ... 458 to 464

THE LAUNDRY BUSINESS.

EVOLUTION OF THE TRADE.

LAUNDRYMEN NOT LOOKED DOWN UPON AT THE PRESENT TIME AS THEY WERE IN THE PAST.

It is not so very long ago that to be known as a laundryman was considered by the public to be classed among the lower strata of business society. Now the feeling against the men who have made a success of the laundry business, and who have endeavored to elevate it, has almost disappeared. To be sure there are still a class engaged in it that will always remain on the same level as a common washwoman.

There are among the thousands engaged in the honest calling of laundrymen, some that are held high in the esteem of their fellow men—men who have risen to their natural level, and become factors in politics, in business ventures, and even in the church circle.

Go to the meeting of the Laundrymen's National Association and there you will find some of the brainiest men engaged in any kind of business, well up in all affairs pertaining to the conditions of the finances of the country.

THE ADVANCES MADE IN THE LAUNDRY BUSINESS, METHODS AND MACHINERY.

PAST REFLECTIONS AND FUTURE PREDICTIONS BY AN OLD LAUNDRYMAN.

(Written expressly for the National Laundry Journal.)

Take a retrospective glance away back into the past, and with the aid of memory; wash, bleach, sour and blue, a batch or two by the old methods, and note the stages in the march of progress by which the laundry business has reached the prominent position it occupies today among the trades. The fact that the writer's experience was acquired in the laundries of two worlds will explain his reference to methods and machines that may be new to the latter day laundryman, although the old timer will recognize in them the ways and means in vogue in the days of "long ago."

Although the custom laundry probably originated in England about the beginning of the century, the steam laundry is an American institution, not quite half the age, the plan of which has been adopted by the older countries within the last twenty years.

The washing machine has been known and appreciated by civilized people in general from time immemorial, and a representative collection of these old machines and appliances, which have seen service in the private home or the laundry wash-room, would form a most interesting and instructive study.

THE "DOLLY," "POSER," "CRADLE," "DASHER,"

and a host of other hand machines of that class, for pounding, squeezing and walloping the dirt out of the clothes were among the first conceptions of genius to lighten the labor of mankind (or perhaps we should say womankind) in their efforts to keep clean and comfortable. Then as a knowledge of mechanics advanced we find some of these like the "Kicker" and "Poser" adapted for steam or water power. The "Dash Wheel" and the "Beetles" were power machines used extensively for washing. Some of these are still in use. The former consisted of a hollow cylinder from six to twelve feet in diameter and two to three feet deep, set up on end and revolving at a speed of 100 revolutions a minute. Inside the drum was partitioned off into four compartments, and the water arrangements and connections were such that a constant flow of water, cold or hot, through each, or any, compartment could be had at will, and there were no restrictions as to quantity used; it didn't cost three cents a thousand gallons in the "good old days of yore."

The Beetles was a machine that could hammer the dirt of ages out of the clothes and make more noise doing it than a battery of rapid firing guns in action. Its mechanism consisted of a row of pins or "beetles," which rose and fell, to rise again, with every turn of a shaft which revolved at one side of a single, or between a double, row of the "beetles," while the tub, which was round, or oblong in shape, kept moving by stages of an inch or two at a time round and round, or endwise, thus bringing the clothes by turns under the battering rams; the operation being kept up until the goods were considered clean.

Another machine which was a great improvement on any of the foregoing, was the single cylinder, revolving and reversible at will, into which the suds and clothes were introduced and the air tight door fastened down. This machine was improved on by the invention about the same time of the stationary tub and perforated cylinder which for something like thirty years has been the washing machine of the steam laundry.

Fortunately for the pioneers in the laundry trade, the art of manufacturing such flimsy fabrics as shirts, collars, ladies' clothes and household linen are now made of was not discovered until recent years. A lot of 35-cent shirts, four ply, all linen, 15 cents a set, collars and cuffs, or 30-cent ladies' skirts and gowns, as now manufactured and sold for Christmas presents, would not have stood the "racket." One of these old pounders would have reduced them to pulp in half a dozen washings; and yet, our modern machines are made to preclude, so far as human prescience can prevent it, the slightest damage to the most delicate fabrics, while undergoing washing.

THE WASH ROOM.

In some of the old-time steam and other laundries the wash-room was a sight. It was nothing uncommon to have to wade about in an inch or two of water from one machine to the other, or dodge a deluge of soap suds sweeping upon one as somebody emptied a big fifty gallon tub on the floor. Now we have washrooms on the fourth floor, or higher, the floors being as free from water as any other part of the laundry. The ideal laundry of today is considered from the points of convenience and hygienics, being all on one floor and lighted from above by means of sky or elevated side lights, which dispel the gloom without throwing shadows of operators on the machines or goods. The next thing to the ideal is the washing department at the highest elevation and the ironing, sorting, etc., on the floors beneath.

The centrifugal extractor does not date as far back as the washing machine. A clumsy, noisy machine at first, it has gradually been improved upon until now it is as nearly perfect as one can imagine such a machine to be.

THE MANGLE.

The mangle takes rank as the first ironing machine, while the history of the flatiron is lost in antiquity. The mangles of early times were simply hardwood rollers between which the goods were pressed, the pressure being obtained by means of levers and weights or springs. Then came the steam heated rolls, a little later the steam heated chest with padded drum, and about the same time the steam cylinder with auxiliary padded rolls. The latter is still a favorite, having been recently very much improved. The large apron mangles are now being used extensively, while mangles with horizontal steam chests, or a succession of these, with six or eight padded rolls, are also in demand.

THE IRONING.

The contrast between the ironing room of today and that of thirty years ago is very marked. Then there were only a few steam laundries worthy of the name devoted to custom work. Now every city and almost every town in the country has its steam laundries, where the washing and ironing is done by machinery. The collar and cuff ironing machine, and the shirt bosom ironers that were the first inventions in that line, were helps to a certain extent, but perfect work was not expected, and much finishing and touching up had to be done on the work by hand. Since then the development of mechanical appliances for doing the work in the ironing department of the steam laundry has been marvelous.

An average day's work for a good hand ironer will range from thirty to forty shirts, ironed completely, folded and finished. In a good going, well managed laundry, using the improved machines, the daily average will run from 150 to 200 shirts for each operator on the several machines required to iron a shirt completely, and the difference in quality between hand and machine work on collars and cuffs is still greater.

Thirty years or so ago the number of ironing machines that were of any use could have been reckoned on one's thumbs; now there are volumes devoted to the enumeration and description of ironing machines for steam laundry use, and every year brings with it new inventions or improvements on machines that were considered marvels of perfection but a short time ago.

FINISH TO SUIT.

The laundryman of today who has a complete outfit of improved machines can finish a shirt or collar to suit the taste of his customer; soft, flexible or stiff as to starching, and domestic, medium or high gloss, as to ironing. Long ago we were sometimes put to sore straits to please the dudes of the time. In this connection one little contrivance that was found very useful and did good work, is worthy of mention. Many of our laundries now iron everything gloss finish, and should domestic be called for the gloss is taken off by means of a wet sponge or steaming. Over twenty years ago, in a laundry where the writer was employed, the process was just reversed. Shirts, and collars, too, were ironed medium finish, and those that required high gloss were polished by a device that was novel then, and would be novel now were it adopted again. The polishing was done by means of friction; no heating was necessary, and the gloss was as high as anything ever produced on an ironing machine, while one piece or a dozen could be glossed without inconvenience, save that of picking them out from the others. The little polisher being always ready, the shirt or collar was ironed in the usual way, like the others, and then taken to the polisher, a few rubs from which put a gloss on it that one could see his reflection in.

STARCHING.

The shirt starching machine, turning out at the rate of fifty or sixty shirts an hour, and the collar machine, starching and smoothing out the collars and cuffs just as fast as an active girl can feed them into it, is a great improvement on the older machines and methods, just as the old machines were in advance of hand starching, which was slow work and very unreliable.

The steam laundry brought into existence a group of kindred industries—the manufacturing of laundry machinery, houses for the sale of laundry supplies exclusively, and the manufacture of laundry soap, starch and bleach.

For the last twenty years the status of the business and the capital invested in it has been steadily improving as well as increasing, a good steam laundry being now recognized as an important acquisition to the industries of any community, large or small. Moreover, within the memory of the older laundrymen, the habits of the people have very much changed in regard to dress; the wearing of starched shirts and collars has gradually become general, until now the workman vies with his master in dress; the maid with her mistress.

The work done in the steam laundry of the past has in great measure been restricted to shirts, collars and cuffs. In the laundry of the future the work done will be of a miscellaneous nature. There are laundries now doing family and flat work, the cash receipts of the work equaling, if it does not exceed, the amount received for shirt and collar work. Home washing and the washwoman are to fade away into the past before the twentieth century is many years old, and one more of the drudgeries of the life of woman will succumb before the genius of man.

PUBLIC WASH HOUSES.

There will also be established public wash houses and laundries in our large cities, in which the tenement dwellers and others, whose sentiments or circumstances preclude the sending of their work to the steam laundry, can have the use of washing machine, tub, extractor, drying rack and ironing machines, with water, steam and power, at a nominal cost per hour.

As an annex to the present laundry there will be secured, or built, an addition, partitioned off into compartments, each compartment being replete with modern facilities and machines for washing and drying an ordinary family washing. These compartments will be rented and used for whatever time it takes to do the washing, after which the ironing, mangling, etc., will be done, at a cost that will induce custom in the laundry adjoining.

The steam laundry is only thirty years old, with a long and a brilliant career before it.

THE NATIONAL LAUNDRY JOURNAL,

which for twenty-two years has been the leading laundry paper of the world, had much to do with the rapid development of the steam laundry business by bringing the inventor and the scientist into close communion with the practical laundryman.

The educating and elevating influence of the trade paper can nowhere be better exemplified than in the history of the steam laundry. Laundrymen from all over the continent, and even unto the uttermost parts of the earth, send items of interest to the JOURNAL now just as they have done in the years gone by, for laundrymen believe, as the poet says, that—

By any thought, that any thing
Can anyhow improve,
We help along the cause of all,
And give the world a move.

HINTS AND SUGGESTIONS.

PLENTY OF ROOM FOR IMPROVEMENT ALONG ALL THE LINES IN A STEAM LAUNDRY.

(Written expressly for the National Laundry Journal.)

It is remarkable, the good quality of work that can be turned out of the large city laundry located in a factory district, in an atmosphere laden with smoke, soot and dust at all seasons of the year.

An eight or ten thousand dollar plant in a basement is another queer idea, and yet custom and hotel laundries of this class are to be found in underground premises in all of our large cities. In such cases there must be compensatory features, or good business men would not select locations where pure air, and, as the aesthetic says, "sweetness and light," are at a discount.

The largest custom steam laundry that ever the writer had anything to do with started in on a paid-up capital of $125,000. The company bought the site, erected the buildings, and equipped these with machinery having a capacity of $2,000 per week, based on a low price list. The smallest steam laundry of his experience opened up for business on a capital of $250 and could turn out $80 per week, based on standard prices, at an excessive cost of labor; thus have we the sublime and ridiculous in laundry life. Between these extremes are custom laundries of all sorts and sizes, which may be classified as shirt and collar, flat work, hotel and miscellaneous work laundries.

The machinery and equipment of a model steam laundry of the latter class, that is, a laundry where all descriptions of laundering is done, will cost $25,000, for which sum an outfit of machinery complete in every respect can be placed in position for turning out $2,000 worth of the best and highest grade work per week. Such a plant is worthy a location and building in every way suitable for carrying on the business of steam laundering.

HOW TRADE IS GOTTEN.

There are various ways of advertising the opening of a steam laundry for business and of soliciting trade from the public. One laundry starts up and in three months has a trade of $500 per week; another starts up and in the same period of time is doing nearly double that amount.

In most of our large cities there are laundry drivers who own their wagons and routes, and take the laundry collected where they choose to have it done, getting from 40 to 50 per cent discount from standard rates.

Recently a large laundry started up in an eastern city by advertising for a driver in each district of the municipality and suburbs, with a route. No difficulty was experienced in securing the services of a number and starting in with a trade of several hundred dollars per week.

The route owner, or fake laundry proprietor—many of them adopt a euphonious, if mythical, title, and have it emblazoned on every side of their one-horse shays, in some cases having the individual name with "propr." or "mangr." affixed—should be given a wide berth. Own your business and wagons; hire your drivers and uniform them; advertise and do the best quality of work that can be done for the prices received commensurate with fair profits.

In another city the management of an extensive plant began business by having several hundred laundry signs painted and distributed among as many agents the week before opening up, thus securing business enough in a short time to make a good showing. In both of the latter instances given the work came in all right, but the profits were not very encouraging, as it takes a large volume of work to make even a well-equipped laundry pay by either of these systems.

Another laundry located in the suburbs of a live city and commenced business by opening an office on one of the principal thoroughfares of the town, putting on half a dozen handsome wagons and advertising extensively. The business done was small at first, but gradually increased, fully justifying the proprietors in the methods adopted, and demonstrating their good judgment in the adoption of sound business principles in trading with the public; the business becoming one of the most valuable assets of the firm.

Some laundries are a combination of the foregoing types. They have both their own wagons and commissioned agents, and also do work for route proprietors; all of these methods being perfectly legitimate so long as the discount and commission allowed is not exorbitant; still the best method is to do business direct with the public, in the name of the laundry, its proprietor, or both, whether the work is collected through drivers, agents or other medium.

There are laundries that work for outside parties who collect and deliver the work, and as a rule they pay big commissions and turn out the poorest kind of work.

A well-equipped custom laundry can undertake a limited quantity of stock work to advantage, as a filler in, making this branch of the trade secondary to the custom work; a larger force of hands may thus be employed all the week through; rush work and overtime, both of which are bad features of the custom laundry, may thus be dispensed with.

MANAGEMENT.

Practical laundrymen, who go into the business for themselves, with the requisite capital, are almost invariably successful, as the knowledge acquired while working for others gives them an advantage over the man who has to acquire his experience after he gets into the business, although many of our most successful laundries, both large and small, are owned by men who had no experience in the work or practical knowledge of steam laundering when they entered the business. Earnest application and strict business management can produce quick returns from money invested in a steam laundry.

Those who are new to the business should leave the practical part of the work entirely to a manager or foreman, or such employees as have had a thorough training and understand steam laundry methods. The man in charge of the work rooms should be an expert laundryman, knowing every detail of the work, and having a fairly good knowledge of mechanics, colorics and chemistry as applied in the latest steam laundry methods.

Practical and competent laundry managers and foremen very often differ in their methods of washing, starching, dampening and ironing, and on this account it frequently happens that laundry proprietors are disappointed in the services of a man who comes highly recommended by former employers, much trouble and inconvenience being caused thereby. Circumstances alter cases; the washing compounds satisfactorily used in one place may give very unsatisfactory results in another; the starching methods by which good results are obtained in one starchroom may not be suitable in another, where different machines and appliances are used for doing the same kind of work. A knowledge of laundry machinery of various makes, the properties of water and the nature of the supplies furnished is essential to competency in turning out good work under conditions that are dissimilar.

In a new laundry things are not expected to go like clockwork the first week, and proprietors generally make allowance for mishaps and drawbacks incident to putting in operation a new plant, still an intelligent, practical laundryman will be able to point out and suggest a remedy for all defective work the first week, and will not even then allow work that is to any extent faulty go out. Given a fully equipped laundry, with all the ordinary facilities for doing good work, competent help of his own selection, and the supplies he asks for, no excuse should be accepted for a continuance of trouble in getting out the work, either in a new or an old laundry, for perfect work and prompt return are two of the essentials to success in the steam laundry business, just as surely as poor work shorts and unreliability are precursors of failure.

.The foreman in the smaller laundry should be an all-round practical laundryman, with experience in working under various conditions, advantages and the reverse.

The fact that a man has had ten years' experience in one laundry, and given entire satisfaction, is no guarantee that he is going to be the same kind of success in his next place. Different machinery, water and supplies often make things so awkward that he is compelled to experiment in his own behalf to find out what he was expected to know.

Each department in a laundry doing $250 per week and upward should be under a responsible head, who can be held accountable for the discipline of all subordinates; the care and cleanliness of the room, and the carrying out of all details in doing the work according to the instructions of the management.

A washman need not be an all-round laundryman, a chemist, machinist, or jack-of-all-trades. It is the foreman or proprietor who should decide by what formula the washing is to be done, the blue to be used, and the time the goods are to be run in the extractor. The washman's duty is to carry out the foreman's instructions to the letter, and see to it that all help working under him do likewise. An intelligent man of good judgment should be chosen to take charge of the washing department, and such a man will be found far more tractable and methodical in the performance of his duty, and precise in carrying out the details of his instructions, than one who knows the business from A to Z and has forgotten more than his master knows.

REMUNERATION OF HELP.

The method adopted in the remuneration of the help must be decided by circumstances. It should always be borne in mind, however, that the incentive to diligence on the part of employees in the performance of their duty is in correspondence with the confidence they have in their employer's ability and willingness to reward them sufficiently. In too many laundries the fear of immediate discharge is used as an incentive to make industry and application compulsory. This method, however, is not only unkind and brutal, but it is unsatisfactory also, because it creates a class of unwilling and dissatisfied employees. There is a class of help that is never satisfied. Some of them are good workers; fast, and can make high wages working by the piece, but with all they want more.

When paying female help by the piece, fix the maximum amount to be earned at say $10 and the minimum at $4. To allow a few girls that are very quick to make $12 or $15 per week, as is done in some laundries, while the majority of ordinarily industrious workers can only make $8 or $10, discourages the latter and produces dissatisfaction, where otherwise there would and should be none.

If paying by the day, or week, have a fixed scale, and pay no more, no less. If a girl that is being paid $1 per day goes off, and her place is taken during absence by a girl earning 75 cents a day, pay the latter $1 per day while she is filling the other's place, and carry out the principle involved in this instance in remunerating the help.

Doubtless some readers will say: "Well, it is an easy matter to preach but a hard matter to practice," and of this the writer is well aware from practical experience in the routine of steam laundry life. It will be admitted, however, that there is plenty of room for improvement along many lines in our methods of doing the work and management of help, this remark being applicable in one case more than another, and these hints and suggestions are given for the benefit of those who are striving after something better in methods and systems, and all others whose motto in business life is "Excelsior."

Expert.

SOME OF THE WORLD'S LAUNDRIES.

Washing in Egypt is done mostly by men, who stand naked on the banks of the Nile and pound the wet clothes on the smooth stones at the river's brink till the dirt is removed from them. French women pound the clothes with paddles in the same way as the Egyptians upon the stones beside a river.

Siamese women wear their gowns while bathing and wash them in the river while enjoying their bath. When they have finished they go up the steps of their floating houses and, having wrapped a sheet around themselves, they wring the water out of their wet clothing and hang them up to dry.

The hardest worked laundresses in the world are, no doubt, the Koreans. As their husbands generally give them about a dozen dresses to wash and every man wears hugely bagged pantaloons, which come up to his neck like those of a clown, they have plenty to do. Generally the washing is done in cold water and very often in a stream or river.

The Japanese rip apart their garments before washing them and, instead of ironing, they lay them while wet on a flat board and stand this up against the house to dry. The method is quite satisfactory, for not only are there no wrinkles left, but some of the materials have quite a luster. The Japanese woman has no washhouse, but does her work out of doors, generally in a tub about six inches high and about as big around as the ordinary dishtub. She rubs out the dirt with her hands and sometimes she uses the greasy Japanese soap and treads the clothes with her bare feet. Chinese women do their laundry work in much the same style.

Lagos, Africa, is called "The Liverpool of the West Coast." Particularly should one notice the place for washing clothes out at the back of the Marina between the police barracks and the jail. The appurtenances are simple; there is a stream, and there are tubs. Each lady, or each clique of ladies, has a tub, usually made from half a palm-oil puncheon, and a plot of ground apportioned to her by custom, and she washes with soap and exertion the cotton loin-clothes of colored Lagos, and, if she is lucky, now and then the white drill garments of the American or European. She is very like her sister laundresses all the world over; her tongue toils quite as hard as her hands.

AN AMERICAN STEAM LAUNDRY IN JAPAN.

Mr. George W. Cummings, of Detroit, Mich., left Chicago November 15, 1898, to set up and start a steam laundry plant at Yokohama, Japan. The plant soon was located in that portion of the city known as the Settlement, and where all foreigners reside. The help is Japanese and coolies, good Japanese hand-ironers receiving $10 per month and coolies $8 per month.

Much trouble is found in procuring help on account of the prejudice and hostility of the Japanese Guild, an association of those engaged at laundry work, this Guild being feared by those whom it is sought to employ. The laundry is run under police protection, and fenced in to afford further protection from annoyance and danger, and the help sleep in the building. From the superintendent down, there is no help employed but Japanese and coolies, except the bookkeeper and the drivers, who are English, and the books are kept in English. The superintendent, whose name is Sengenyama Motomachy, acts as interpreter for foreigners.

A fair rice starch is manufactured there which produces stiffer work than corn. It comes in a damp, though stiff, shape, similar to butter, in tubs, barrels, or can be had in any kind of a package wanted. It does not, however, give as good satisfaction as the American article, and is not used in this laundry to any great extent.

There is some soap manufactured there also from linseed and fish oils. This is a poor article and American soap is used altogether.

Bleach and other latter-day American materials for the betterment of laundry work was introduced by Mr. Cummings, much to the surprise of the superintendent.

A careful watch has to be kept on the stock of supplies, as it takes about nineteen days for a letter to reach here with an order, and a little longer for the supplies to reach Yokohama after being shipped.

The Japanese have a system of steaming clothes that are extra soiled, which is done by placing the goods in a tight apartment and leaving them in steam twenty-four hours. This process was adopted in the Yokohama laundry to satisfy the superintendent, who was an old Japanese laundryman, but it has already been abandoned for the American system. The superintendent met with many surprises in the different methods shown him by Mr. Cummings, particularly in extracting stains.

The Japanese collect and deliver laundry work with hand-carts, but the Yokohama laundry had three covered delivery wagons built which it uses in the business. Mr. Cummings took the running gears for two wagons over with him, but they could not be used on account of the streets being so narrow they could not be turned in the street. English carts are used very largely, and there are some four-wheel carriages used, but they have to be built so as to permit the front wheels to turn entirely under, so that they will turn in a very narrow space. The Yokohama laundry paid $15 per month for a delivery horse and harness, together with a driver, for one of the wagons.

Yokohama has a population of 119,000 natives and there are 1,700 foreigners, which are mostly English, German and French—the Americans being comparatively few. The foreigners were all obliged to live within the territory known as the Settlement, which is within the city limits, and set apart for foreigners, and not allowed to own land or reside anywhere else (with the exception of missionaries). Natives are allowed to live in the Settlement also, but are not disposed to do so, excepting some few who are there for business purposes.

Since July 1, 1899, under the new treaty which took effect at that time, foreigners are privileged to lease and reside anywhere, but it is said that they must come under Japanese laws instead of under the laws of their own country and the protection of their consul, which they consider so disagreeable that many contemplate leaving on that account.

Mr. Cummings reports the winter temperature in Japan to be very mild and agreeable; he experienced a few flurries of snow while there, it being two inches on the ground at one time, but disappeared before noon. There is just enough frost at times to slightly stiffen the ground. There is much dampness and humidity in warm weather which is very trying to a foreigner.

Concerning food, meats are reported to be high in price, mostly imported, and somewhat tasteless; all kinds of meats, as well as chicken, appearing to taste somewhat similar. Chickens, pheasants and quail are had in plenty, at moderate prices.

There is considerable American beer sold, and it costs, strange to say, more than whisky, the beer selling at 12½ cents, while whisky sells for 10 cents a glass. All prices quoted in this article refer to a gold basis.

Flowers grow in plentitude but have very little perfume. The currency of the country is on a silver basis, the silver dollar fluctuating in value from forty-nine to fifty-one cents gold.

LAVANDERIA AMERICANA.

AN AMERICAN PLANT LOCATED IN CARACAS, VENEZUELA.

It was our pleasure lately to receive a letter from Mr. Rudolph Dolge, Caracas, Venezuela, president of the company known as "Lavanderia Americana," in which he gave some very interesting facts concerning the business.

The "Lavanderia Americana," which is Spanish for American laundry, is the successor of another American company which endeavored to establish a laundry at Caracas about a year previously.

The company has a paid-up capital of 60,000 bolivares, equal to about $12,000 in American gold. All the money subscribed for the stock is native capital. The foreman of the plant is an American laundryman. The help is mostly colored natives, though there are some Cubans who are employed as hand shirt ironers. These receive from seven to eight cents, American gold value, for every shirt ironed, and although they do excellent work they are slow, hardly averaging more than twenty shirts per day. The other help earn from fifty to eighty cents per day (American gold) and are also considered very slow workers compared with Americans.

The business is progressing very nicely in spite of Chinese laundrymen and other low-priced competition. It has increased every week until at present the plant is on a paying basis. The list used by this laundry is in Spanish and English. Prices for shirts range from 18 to 25 cents, the latter of which are designated "plaited or embroidered, and collars and cuffs attached." Shirt bosoms are 10 and 15 cents; collars 4 cents; cuffs 8 cents; underwear from 8 to 12 cents; socks 4 to 10 cents; handkerchiefs 2 cents. Considering the great cost of supplies, coal $22 per ton, soap 26 cents per pound, maizena (starch) 25 cents per pound, tallow 11 cents per pound, and everything else in equal proportion, the prices charged for work are exceedingly low.

The fuel problem, while a serious one, is not the worst, and will in time be overcome when the contemplated gas fuel plant is completed. Gas at present is $4 per 1,000 cubic feet, which makes its use out of the question. Gasoline would be better, but the steamships will not carry it regularly, consequently its use has almost been abandoned.

Great difficulty lies in the matter of the starch and soap supply, and they are thinking seriously of making their own soap.

INTERESTING COMMENTS CONCERNING PEOPLE WHO PURCHASE LAUNDRIES IN ENGLAND.

(Contributed to the National Laundry Journal by Porcupine.)

Inquiring into the advancement of the laundry trade in England during the last twenty-five years, many features are presented. The social status of the owners represents as motley a group as ever entered and invested in a business; when we consider that this form of employment, as a rule, was formerly despised by many as degrading from the very expression of an "old washerwoman" as a term of derision.

What, however, do we now find? The son of a peer (who sits in the house of lords, by position a duke) leaves his classic studies at the university and enters the laundry trade, devoting his best energies to making a successful business; while the daughter of an earl finds happiness in superintending the washing of soiled linen, actually becoming the sole proprietress of a steam laundry. Clergymen and others who administered religion and who once went in for purifying the souls of the community now oversee to the purification of body linen in their own laundries.

A renowned actor, "tired of life's fitful fever" on the stage, finds rest and financial help in Shakespeare's quotation "I to the laundry" in buying and conducting a steam plant. The royal navy gives a goodly number, mostly pensioners, as owners of laundries.

The soldiers of the queen are not behind, and many of them have invested and take practical interest in their laundries. A retired colonel, several captains, and those from almost every rank down to plain Tommy Atkins have stormed the laundry fortress and made good prize money at the job of keeping folk in clean linen.

I found a popular author to be the owner of a steam laundry and doing well with it. And another writer (whose works are read by all classes on both sides of the Atlantic) lays aside his pen and takes delight in seeing that hotel linens are snow white and of a beautiful lustrous gloss. Reader, would you expect to find an African explorer and lion slayer (whose residence holds numerous specimens of natural history from the noble lion to the humble antelope), after braving all the dangers of exploring, meekly settling in the laundry business? Yet such is the case. An express engine driver from the Great Central Indian Railway leaves the locomotive in the tropical climes of India to superintend the machinery of his own laundry.

I have found some who have been in the diamond fields of the Transvaal and the gold mines of Australia exchange their occupations for the laundry, and take kindly to it. The law has its representatives in the laundry business; a solicitor's clerk afflicted with writers' cramps puts "his bit" in the laundry business and is successful.

The medical profession, doctors and surgeons, an apothecary, the pensioned policeman, a bottled-beer merchant, an architect, machine shop assistants, butlers, housekeepers, and cooks, have all entered the ranks of the laundry business.

The contents of this article may read like a romance but they are facts and "facts are proven truths." The credit of introducing these various classes of capitalists to this thriving industry is largely due to the influence in business-like capacity of the laundry agent and surveyor, who, with his usual courtesy, was kind enough to give the writer a long and interesting interview from which he gleaned the information which forms the contents of this paper.

We were astonished to learn the enormous amount of capital invested in laundries, which reaches to some millions, and still more surprised to learn that a single steam laundry was recently sold for £30,000, and it seems nothing unusual for a laundry to bring £10,000 or £20,000; in fact all prices are realized, even as low as £7 for a laundry.

London, Eng.

A PUBLIC INSTITUTION LAUNDRY AT IGLAU, GERMANY.

We have had translated from the "Internationale Wascherei-Zeitung," of Berlin, Germany, the following, which shows that the laundry methods of America are being followed:

"From the prospectus handed us by the direction of the National Reform School concerning the management of its laundry we draw the following:

"The female inmates of the institution are instructed in all industries, so that after their dismissal they can more easily by their skill obtain employment as a domestic. In the laundry everything is washed by hand. The preparations are same as made at households where the washing is done. The only machines used are an extractor or wringer, and mangle. The laundry employees number from eighty-five to ninety persons. This branch of business was introduced into this institution many years ago and enjoys a great number of customers as well as numerous acknowledgments of its good services.

"The soiled washing from the citizens of Iglau is collected and delivered twice a week; the laundry work can also be delivered at the institution itself. From outside the city the laundry work is sent in closed baskets under the address of the institution as railroad freight, with assured delivery time. The transportation to and from the depot is paid for by the institution. All kinds of laundry work is taken for the purpose of cleaning, as well as starching, ironing and mending them.

"The laundry work from outside, such as that of butchers, bakers, etc., is delivered on agreement in from ten to fifteen days. The price for complete laundering of mixed work, gentlemen's and ladies' underwear, chamber, table and household laundry, etc., per kilogramme, from 10 to 16 kr. Smaller packages as well as single pieces, starch or other fine wash, are charged by the piece. On every bundle a complete and accurate list of the articles is requested. Differences which are observed by the assortment of the laundry work are reported.

"A certain part of the income is given to the workers; the remainder serves to cover the government expenses and to partly indemnify the national treasury for the preservation of the Reform School.

"The work done in this institution amounts to about 20 meterzenters per week.

"It is possible that at some time in the future the laundry may be changed into a steam laundry, concerning which the government has to decide upon."

DOWN IN OLD MEXICO.

A DESCRIPTIVE LETTER THAT SHOULD BE INTERESTING—HOW THEY OPENED THEIR LAUNDRY.

Mr. C. G. Collison, as manager of the New American Laundry at Durango, Mexico, writes the following:

Editor National Laundry Journal:

This is the country. for a laundry, as the Mexicans like a good stiff shirt, collar and cuff, with plenty of high gloss, and the higher the better. The water here is all right for washing. The business has its drawbacks, but the worst thing we have to contend with, I think, is the help, and the feast days. The people are not used to machinery, and most of them think that the only way to wash is to take a stone, lay it on the ground, place on it the goods, when wet, and after rubbing on them a little soap, they take another stone and pound the clothes until they are supposed to be clean and have a few holes more or less in them.

When the laundry was ready to open for business the people seemed pleased and ready to patronize it, so on April 4 we decided to commence operations. We had the rooms decorated inside and out with Mexican flags and evergreens; the machinery was all ready to put into operation, and every employee was in his or her place. There was a band of eighteen pieces, and refreshments, solid and liquid, ready to be served. But you can't start a new business down here without the assistance of the church. At 2:30 o'clock there arrived, in all pomp and splendor, a priest of the Mexican Catholic Church. This functionary figures in everything and is, of course, very much respected by every one, whether Catholic or Protestant. When all was ready he marched around the laundry and proceeded to sprinkle the place with holy water, and when this ceremony was completed gave a signal and the belt shifter and engineer started all the machinery. Every employee began to work, and the business opened up under the most sacred auspices. If after this we don't make a success of it, it will not be the fault of the church.

But talk about your crowd at an opening! Why, the place was packed as thick as sardines are in a box. They were very inquisitive, also, and fingered everything they could lay their hands on. It kept us all busy for the hour the machinery was running to prevent them from losing their fingers or hands. It was a comical sight. One woman had her dress caught in the extractor belt, and it came near removing all her garments, or subtracting them, I might say, from her little body. Another woman put her finger into the lime bleach and tasted it, but she didn't do it again.

After the hour was up the refreshments were served, and then followed merry-making and dancing. It was without doubt the "grandest opening" ever held in a laundry.

Going back to what I referred to as drawbacks in the business here, the greatest thing we have to contend with is the feast, or holy, days. There are about five holidays to our one, and just imagine having a large amount of work to turn out at a certain time, and your help informs you that tomorrow is a "festa," and they will not work! No use cussing, you must give in, grin and bear it, and take chances with your customers when it comes to explaining the cause of the delay in delivering their work.

Fuel is high here. Wood is used mostly and is sold by weight, at 5 cents per kilo, or two and a half pounds. The duty on supplies is also very high. They must be purchased from the States. Prices are good, though, and we will make some money.

THE FIRST STEAM LAUNDRY IN NICARAGUA.

The first steam laundry plant ever established in Nicaragua was opened at Bluefields about October 15, 1899. The idea of starting a plant here was originated by Mr. G. W. Fort, a laundryman formerly of Deadwood, S. D., and later of New Orleans. He visited Bluefields for a few weeks prospecting, and discovering the natives were laundering soiled clothes in the most crude fashion, set about to find capitalists who would invest money enough to put up a full-fledged American laundry. In this he succeeded at once and secured the co-operation of Capt. Sargent, who commands the S.S. Hendy and sails from Bluefields to Rama, Nicaragua; also Mr. T. M. Waters, of the Bluefields S. S. and Banana Co., plying between Nicaragua, New Orleans, Mobile, Honduras and other points.

Bluefields is not a large city, but has a population of about 3,500 people. The language is Spanish, but the inhabitants are of a better class than is usually found in Central American countries. About sixty miles from Bluefields are large gold mines which are being rapidly developed.

AMERICAN MACHINERY ABROAD.

A RAPID-GROWING TENDENCY TO ADOPT OUR METHODS IN STEAM LAUNDRY WORK.

European laundrymen are not slow to grasp a new idea. They are constantly on the lookout for machinery and methods that will improve their work, as well as place them on an equality with the laundries of the world.

American manufacturers of machinery have been quick to discover that improved methods and improved machinery are needed by the English, as well as all other foreign laundrymen, consequently they are in the field, and it is generally admitted that they are fast getting control of the trade. It will be only a few years when the manufacturers of machinery abroad will awake to the fact that they are not in it, consequently must improve their machinery or handle those made by Americans.

In France there are very few steam laundries. Old methods are still in vogue, but the French blanchiessers are rapidly becoming convinced that the American methods must be adopted, consequently are investing in new American machinery to a great extent.

In Germany the feeling of distrust still exists against American machinery and methods, but it will be but a short time when American-made machinery will come into general use throughout the German Empire.

In Ireland there are quite a number of first-class plants, some of which are conducted on the American plan, and all of which are fast adopting it through the efforts of bright, progressive and intelligent men who are interested in the sale of American machinery.

EXPORT TRADE TOPICS.

AMERICA'S INVASION OF THE WORLD'S MARKETS WITH LAUNDRY MACHINERY.

In assigning reasons for what our friends across the water are pleased to term the "American invasion of the world's markets," and especially in seeking the cause for the great favor with which many of our manufactured products are regarded, one important fact is generally overlooked. There seems to be no doubt, for our competitors themselves acknowledge it, that our machines of all classes are better designed and better constructed than similar ones offered by them. There is no doubt that the boxing and packing of the articles shipped from this country are superior, and the breakages and other injuries in transit consequently much less. We are also credited with greater energy in pushing our trade when a foothold has once been established. With keen acumen in finding out what is wanted and then supplying it; with flooding the world with tastefully designed and well printed circulars, advertisements and price lists, and in this way operating upon the "weakness of all peoples and countries for style and appearance," and spiriting away trade from our more conservative friends in the British Isles and on the continent of Europe.

So far, so good; but the principal reason why our machinery manufacturers are meeting with ever-increasing favor and success in Europe as well as in other lands where we have British, German and French competitors, is that the makers of the United States, having been engaged for years in meeting and supplying the wants of this country—wants the most varied and exacting to be found the world over—have been inventing and developing machines and devices exceedingly well adapted to every class and variety of work, simple though effective in construction, economical in operation and lasting in service.

Let us take the item of axes for example. In this country, with so much clearing of woodlands, we would be but poor mechanics if 250 years of such work had not enabled us to make an ax that should combine the right proportion of parts, lightness, strength and adaptation to various kinds of work. The same general principle has operated to make the laundry machinery of the United States the best in the world—the necessity of adapting it to every variety of conditions has enabled us to build machines that can be put to the best and most economical use in any laundry from London to Brazil.

But the real cause of our present supremacy in machinery manufacture, and the one which includes nearly all the others, is the fact that we have had no cheap labor to depend upon; in consequence of which the manufacturer in nearly every department of industry has been forced to rely mainly upon perfected machinery. This has encouraged and developed inventive talent, until we lead the world in the application of machinery to all kinds of useful work. We have thus supplied our own wants better than any other nation could have done, and are in a better position to discover and supply the wants of foreign customers than our best competitors.

If makers of laundry machinery in America would build up an extensive European trade, through resident agents, they must oftentimes be prepared to grant long credits to such agents. Much of the export business in manufactured products has been transacted through foreign brokers in New York city, the brokers placing the orders and guaranteeing payments by customers, or themselves paying and drawing upon their customers. The broker is by no means indispensable to a house seeking to cultivate the foreign field. Not being closely in touch with the demands of any particular industry in this country, or in the one to which shipment is contemplated, he has little power to stimulate exports. Drawing against bills of lading is likely to be immediately superseded by sixty days' acceptance, a change which is eloquent of the confidence which American makers repose in foreign customers. But, as already hinted, this display of faith must be heightened if large sales are to be made upon terms not more severe than competing makers in their countries offer.

One of the standing grievances felt by American exporters to foreign markets is the lack of facilities for negotiating commercial paper except by way of London. One of the measures passed by the National Congress last year was one incorporating the International American Bank, with a capital stock of $5,000,000 and the privilege of increasing it to $25,000,000. At the present time there is said to be not a single United States bank on the South American continent.

To secure some positive information concerning the financial condition of the prospective customer, manufacturers ask for American references; but they must not wonder if in many cases such references can not be furnished. On the other hand, the American manufacturer can not avail himself of European trade references, owing to his own lack of connections in that part of the world. This condition of affairs has forced the sellers of many kinds of machines to make special terms for cash at the time of shipment—terms often too low to admit of reasonable profit. Cash terms are in many cases inconvenient to customers, as every foreign purchaser can not be expected to have a banker at every American port.

It is stated that the matter of payment methods loses more business to the American exporters than all other causes combined. To transact business through bankers abroad and also at home adds to the cost and delay, and it is owing to this difficulty largely that so much American trade is handled by European middlemen who have connections in all parts of the world. The proposed International American Bank ought to do much to obviate all this, and consequently to expand American laundry machinery manufacturing.

That "trade follows the flag" has long been an axiom with nations who pursue the arts of peace and of war together; and its truth is being exemplified in some new forms every day. The recent large increase in the exports from the United States to Venezuela has been directly due to the increased facilities offered by the establishment of the Red "D" steamships from New York. Previous to the organization of that enterprise, communication between the United States and Venezuela was uncertain and difficult. Although New York was much nearer, the exports and imports of that important South American state were mostly with European countries, on account of the superior facilities for regular communication.

The history of foreign trade is much the same everywhere, only in a less degree, and the testimony of American consuls as a whole agrees that the establishment of lines of American vessels is followed by the immediate increase of American trade.

CONVERSION OF AN UNBELIEVER.

RESULT OF A VISIT TO AMERICA CONVINCES AN ENGLISHMAN THAT THE OPEN DOOR POLICY IS THE BEST.

The London Laundry News published an interview with Mr. James Armstrong, the well known laundry machinery engineer and expert, which is very creditable to American-made machinery, which Mr. Armstrong has handled for many years.

Some fifteen years ago, Mr. Armstrong said he worked hard to secure the support of collar manufacturers in Great Britain and Ireland, and endeavored to induce them to use American methods, more especially American collar ironing machines; but his experiences were so disappointing that he altogether ceased to try to secure converts by personal solicitation, some ten years ago. In February last, however, Mr. Mugford, of Messrs. R. M. Moody & Co., called upon him and desired to gain some information on collar ironing machinery in general. He was sufficiently interested in the explanation given to send a number of new collars to be treated with a view to gaining further information. These collars were treated in an ordinary laundry not especially adapted for carrying out the dressing of new work, but although the results were not thoroughly satisfactory from a collar manufacturer's point of view, yet they were sufficiently good to demonstrate the capability to turn out work of the desired quality.

Mr. Mugford was therefore further interested, and at Mr. Armstrong's suggestion took a trip to the United States to further investigate. Upon his arrival he was furnished with introductions to Mr. Wiles, of the Wiles Laundering Company, Troy, N. Y., and visited that firm's establishment. He took with him a large lot of collars made in Messrs. Moody's factories, and these he had dressed in the Wiles Company's establishment. He was so satisfied with the results that he immediately ordered a complete set of machines, and the plant is now almost completely erected at the firm's factory. Hence Mr. Armstrong's joy at the "conversion of an unbeliever," and the ultimate crowning of his years of patient labor with success.

Mr. Mugford's visit to the United States has, however, produced more far-reaching results than this. He found that in the United States he was received by American collar manufacturers with much courtesy, and with such an entire absence of any desire to hide any portion of their processes from the gaze of their British competitor that he has resolved in the future to keep "an open door" at Messrs. Moody's establishments. So satisfied is he that the policy of the "open door" is beneficial and best for all concerned, and reciprocity is a much surer way of gaining knowledge than the depending on secretive processes and the closing of doors in competitors' faces, that he has now announced his willingness to show his new plant and every other portion of his factory to any properly accredited visitor, be he a direct competitor or not.

CHICAGO THE LAUNDRY MACHINERY CENTER.

The developments in the machinery trade of the city of Chicago are of a most gratifying nature. It can now be said without fear of contradiction that this city is the center for the manufacturing of laundry machinery for the entire world. All of Europe is now using more American laundry machinery than it is of home manufacture, and it is equally true that by far the greater part of it was made in Chicago. The local machinery manufacturers of this sort have formally opened branch houses in Europe to take care of a constantly increasing trade. Heretofore these firms have acted through agents, but the volume of business has outgrown this method of doing business. Editor Charles Dowst, of the NATIONAL LAUNDRY JOURNAL, said: "Chicago is distinctly at the head of the laundry machinery manufacturing business of the world. Troy, N. Y., which was once at the head in America, compares with Chicago in that line about as Rochester, N. Y., compares with Minneapolis as a mill center. Both were once great, but the star of empire, so to speak, has moved westward. Chicago-made machinery is washing more than half of the world that indulges in the luxury to any important extent, and in another decade it is more than probable that the heavy, clumsy, non-profitable and altogether antediluvian machinery that has heretofore been turned out in Europe will all be in the scrap heap and the light, strong and effective American machinery will be running in its place. Of the six Chicago firms operating in Europe three are established in London alone. Of the three others two have branches in France, Belgium, Holland, Germany and Denmark, and one has branches in England, Ireland and Scotland."—Chicago Times-Herald.

HOW LONG WILL A WOOD WASHER LAST?

How long will a wood washer last? is a question frequently asked by laundrymen. It is very plain that much depends upon the manner in which a machine is used, whether moderately as in the small laundry, or ten hours per day, six days in the week, as in the large metropolitan washroom. Still another factor is the action of the bleaches and acids. These take the life from the wood and quickly destroy the machine. It is hard, therefore, to make any guarantee as to how long a machine can be used, but at the best all machines have hard service and it is essential that the very best material should be used in their construction. The following letter is interesting in connection with this subject:

"Troy City Laundry,
"Newark, N. J., May 18, 1899.

"*Troy Laundry Machinery Co., New York City.*

"Gentlemen: Will you kindly give me your price on an inside cylinder constructed entirely of maple without hoops or hinges for one of your No. 2 or 29x48 washers? The cylinder is for your machine which I purchased in 1880 and this is only the second inside cylinder which I have had to buy for it during that time. The outer case is in sufficiently good condition to warrant my buying another inside cylinder. Awaiting your advices, I am, yours very truly,

(Signed.) "R. McKeon."

WATER AND ITS FILTRATION.

The following extracts are taken from an article on filtration published in the April number of the Irish Textile Journal: "Scarcely any industry but is dependent in one or other of its operations upon a supply of water, and there are few in which its purity is not of great importance. It is not, however, generally known what great strides have been made in filtering machinery during recent years, and that many waters that are apparently totally unfit for use can be easily rendered bright and clean.

"In many cases the advantages of filtration are sufficiently obvious, but in some instances it may not be out of place to point out the benefits to be obtained. A very dirty water may be, if filtered, far preferable to water-works water, which, although clean, may be much harder. Deposits of dirt and scale tell their tale in the increased coal bill (in some cases 40 per cent) and cost of repairs. Water in many cases can be pumped and filtered, including all charges, at less than 1d per 1,000 gallons, and the saving effected is naturally considerable."

The construction of a filter is then given as follows:

"The filtering vessel or body of the filter is composed of wrought or cast iron, and contains a layer of suitable filtering material on a grating, under which is a distributing apparatus for air. The dirty water enters at the top of the filter, and, passing through the filtering material, emerges at the bottom bright and clean. The cleaning of the filter, which occupies a few minutes every ten hours, more or less (according to the state of the dirty water), is effected by admitting at the same time a reverse current of water and a large quantity of high-pressure air obtained from the steam blower supplied with the filter. The whole of the filtering material and contained impurities are seen to boil up, the most violent agitation takes place, and the particles of dirt are washed away and the filtering material left clean. Through the mud outlets pours a stream containing all the matter deposited in the filter. Thus the user has a continuously efficient filter without any removal of the filtering medium.

WATER SOFTENING.

"Under some conditions filtration alone is not sufficient—viz., where the water to be dealt with originally is hard, and a soft water is required. The advantages in certain cases of soft water are too well known to require detailed description, but allusion may be made to laundries where the cost of softening is repaid over and over again by the saving in soap, often amounting to 30 pounds per 1,000 gallons. Various means have been adopted to accomplish this end, nearly all depending upon the removal by precipitation of the suspended lime, etc., formed by the action of the re-agents. Subsidence alone does not, however, remove all the small particles, which then give very considerable trouble in choking pipes and valves, etc.

FEED-WATER FILTERS.

"The great drawback to using hot but greasy water from a surface or jet condenser for boiler feeding has always been the injurious effects to the boiler plates, caused by the greasy matter, with some waters forming a kind of soap, adhering to the plates and preventing the intimate contact with the water necessary to prevent overheating. With a view of overcoming the difficulty many forms of feed-water filters have been tried, but their general defect has been the very restricted filtering area, causing speedy choking and great increase of pressure in the feed main."

SOAP AND BLEACH.

HOW TO MAKE AND USE THEM.

Editor National Laundry Journal:

Our recipe for making soap is as follows: Sixty to seventy pounds of tallow melted and then add ten to fifteen pounds of 98 per cent pure powdered caustic soda, according to condition of tallow; boil slow for from two to two and one-half hours with barrel one-half to two-thirds full and then fill barrel while soap is still hot, with cold water; thoroughly stir, let harden, and you will then have a good hard soap.

To get ready for use take from four to five wooden buckets of hard soap, put in barrel, add water until one-half full, boil same until thoroughly dissolved; then fill barrel with water and you will have a barrel of soft soap ready for use.

We use whisky barrels to make our soap in; having one for soft soap and one for hard soap. We have been making our soap in this manner for the past eighteen months and have had no black specks or yellow edges. Our work is white, and first-class in every respect.

Bleach: To twenty gallons of water, ten pounds of 98 per cent pure caustic soda (powdered), and ten pounds of chloride of lime; dissolve the soda separately in wooden buckets, and when cool add to lime; stir thoroughly, to entirely dissolve the soda and lime; allow the solution to stand for a few hours to settle. Be careful not to use any of the sediment that goes to the bottom. Use from three pints to two quarts of the bleach, according to size of wash.

In washing we run ten minutes in cold water; run off; run in warm suds forty-five minutes; that is, keeping suds just about as hot as you can hold your hand to them, and then turn steam on and almost let suds come to a boil in the next fifteen minutes, run off; rinse in cold water, run off; take colored goods out and put one and one-half gallons of soap in on white goods, turn steam on full head, one and one-half inches water in glass on washer; take two quarts of bleach, put in bucket and draw cold water until bucket is full and put same in washer and let boil until steam comes out in room (about fifteen minutes), run off; and rinse in cold water, run off; put colored goods back in washer, rinse in cold water and run off; sour and run off, then blue and your wash is clean, white and all O. K. Yours truly,

W. P. K.

FULLER'S EARTH IN THE LAUNDRY.

French laundrymen still use Fuller's earth to a considerable extent, especially in washing bedclothes, curtains, carpets, and heavy goods generally. The use of the earth has the effect of not only freeing the stuff from dirt and grease, but also to a considerable extent of reviving faded colors.

The Fuller's earth is mixed with about half its weight of water, and the mixture is spread over the fabric to be cleaned, which is then placed in a tub. Here water is poured upon it little by little until it ceases to be absorbed, but all excess of water is avoided. Then the stuff is worked about for some minutes exactly as if soap were being used, and finally rinsed and dried. A washing machine is often used, but more frequently the fabric is worked about and turned over in the tub with thick and heavy pieces of wood or with the feet of the workpeople, who are treading the material to be cleaned, and wielding the massive clubs at the same time. It is not found economical to use Fuller's earth for small washings or for light articles, as soap is far better in such cases.

Thus the oldest known detergent holds its ground still in foreign laundries, although in this country its cleansing properties are no longer taken advantage of in washing, except for industrial purposes. For the washing of garments and household articles it is discarded at any rate in general practice. Consisting as it does of hydrated silica to the extent of about 90 per cent, it has such special power of removing grease that it is far better for that purpose than caustic alkali, and, unlike the latter, has no injurious effect whatever on the most delicate material.

Fuller's earth is very widely distributed, that from the oolitic strata of the west of England being the best in the world, and it seems a pity that it is not more used. A fortune awaits any inventor who will find out some means of enabling it to be regenerated after use, so as to enable it to serve its purpose several times.

Fuller's earth may be known from ordinary clay by its unctuous feel, but especially by its behavior when wetted, as it does not then become plastic, but simply forms a fine powder. When first dug it is of various colors, that of a greenish hue being considered the best, but it bleaches white if dried in the sun and air. This drying gets rid of about two-thirds of the water present. Sometimes artificial heat is used for the drying, but in that case care has to be taken that the earth does not get overheated. In that case it will be spoiled, and the saving of time in the drying will not be of much value.

It is certainly remarkable that a substance so totally different in composition from any soap should have such similar properties. Fuller's earth contains practically no alkali metal, and certainly can not form any caustic alkali when acted upon by water. It seems to act solely upon grease, and any other dirt is removed by the action of the water and the rubbing as soon as its adhesion to the fabric is destroyed by the action of the Fuller's earth upon the grease with which it is mixed.—London Laundry Record.

CAUSTICITY OF LYE FOR SOFT SOAPS.

In the formation of the soft soaps the caustic alkali (potash) alone acts as the true soap producer, the effect of the carbonate of potash added being solely to impart the necessary consistency to the soap, and not to reduce the causticity of the alkali. The same effect is obtained with other salts of potash, such as the chloride which is used along with low-grade alkali, but these chiefly reduce the yield of soap by their stronger interference with combination than is the case with the carbonate—a parallel to the behavior of the soda salts, which, in addition, deprive the soap of its transparency.

The employment of carbonate is essential in soft soaps, but the relative proportion is by no means invariable, depending chiefly on the fats used and the season of the year. In any case, it is preferable to use a high-grade caustic alkali and to make good any deficiency of carbonate by an addition toward the close of the boiling process.

With reference to the employment of 50 per cent caustic potash, so frequently advocated of late, it should be pointed out that, although for soap makers whose works are in the near neighborhood of alkali works, this 50 per cent potash may be cheaper than the solid caustic, because the maker's expenses of evaporating the residual water are avoided, the case is altered where carriage from a distance has to be paid. In such event the buyer of the 50 per cent potash has to pay freight on 50 per cent of water, and as the solid caustic averages only 20 per cent of water the difference for a maker using five tons of 50 per cent potash a month is considerable, being equal to carriage on twenty-four tons of water in the course of a twelve-month, to which must be added the extra dead freight on the iron drums. The point is one well worthy of consideration, and, in fact, it is almost certain that, for the foregoing reason and also because the high-grade potash gives as large a yield of soap as the more dilute, the latter will ere long be altogether displaced by the former.

In large works employing direct steam it is necessary to use stronger lye than where fire heat is used for soap making, because of the longer time required to concentrate the soap from weak lyes, such as the 27 degrees B. home-made potash lye, prepared from carbonate of potash and quicklime. The irregularity of the latter lye also militates against its utility for large establishments, whereas with a high-grade potash the work goes on according to fixed rules, once the amounts of potash solution to be added according to the time of year and class of fat have been determined, and thus a uniform product is obtained with a minimum of trouble.

Experience shows that soaps prepared from natural fats require rather more carbonate than those made from fatty acids, the reason for this being that the intramolecular attraction of the constituents of the soap is somewhat loosened by the presence of glycerine, which is absent when the fatty acids are used alone. The out-ward indications of this condition are evidenced when the soft soap contains an insufficiency of carbonate, in which case it forms a soft opaque mass, but recovers its transparency on the deficiency being rectified.

Soft soaps containing resin require a more caustic alkali than otherwise, because the potassium resinate is stored between the molecules of the viscid mass. Hence it follows that glycerine and potassium resinate reduce the causticity of soft soaps in the same way that the former body and sodium resinate behave in hard soaps.—Seifensieder Zeitung.

SOAP MAKERS' ALKALIES.

The term alkali comes down to us from Arabic times; its meaning is really alkali, "the salt," and it was used to denominate a saline body often found in the hot eastern climes as an efflorescence on the soil, and more especially in the neighborhood of stables and the drainage of rubbish heaps.

This alkali was of a very crude composition, and varied somewhat in its composition according to its source. The property which gave it value was that of forming an emulsion with oil, and this emulsion had stronger cleansing powers than either the oil or the alkali. There is no doubt that this property was due to the alkali containing appreciable quantities of the carbonate and caustic forms of the alkali proper.

As course of time went on it was found that a similar body was obtained by the combustion of wood, which was found to leave a white ash on burning, this ash possessing stronger alkaline properties than the original alkali. These gradually usurped the name.

Then it was ascertained that sea weeds also left ashes of an alkaline character on combustion, which was found to be different in its action on oils than the ashes from wood, the soap it made being harder in character than that made by wood ashes; consequently two kinds of alkali came to be recognized; marine alkali from sea weeds, vegetable alkali from trees; and, moreover, the soap-makers began to produce two kinds of soap: hard soap from the first mentioned alkali; soft soap from the vegetable alkali.

Later, the fact that by treatment with burnt lime these alkaline bodies could be converted into stronger bodies, the caustic alkalies came to be found out, and that these had more action on the fats was also recognized and made use of in soap making.

Finally came the discovery by Sir Humphrey Davy that the alkalies were compounds of two peculiar metallic bodies, one of which he named sodium, the other potassium. Of these metals it will be sufficient to say that sodium has since become of some industrial importance; they are soft metals, considerably lighter than water, on which they float. When fresh they have a silver white appearance, but soon become oxidized on exposure to the air, becoming coated with a film of oxide; on water they have an energetic action. Sodium floats about with a hissing sound, and causes the evolution of hydrogen, while caustic soda, sodium hydroxide, remains in solution. Potassium has rather more energetic action, and the hydrogen which is set at liberty is set on fire and burns, owing to the great amount of energy which is developed, while caustic potash remains in solution.

The alkaline compounds which are of most interest to the soap-maker are the two named above as the action of the metals on water, viz., sodium hydroide, or caustic soda, and potassium hydroxide, or caustic potash, and these alone are capable of acting upon and forming with fats the various commercial forms of soap. Besides these the carbonates of the same metals, sodium carbonate, or as it is better known, soda, and potassium carbonate, or potash also merit attention.—Oil and Colorman's Journal.

LAUNDRY SOAPS.

At a meeting of the Liverpool Branch of the Northern Counties Laundry Association, held in Liverpool, England, the following paper by Mr. H. Burbie, on the subject of "Laundry Soaps," was read:

"The soap question must ever be of interest to the laundryman. The principal matter that interests him is, what soap? There is an endless variety of adulterants for soap, and the most important thing to know is the composition of the article; often the best looking soaps contain the most mischievous adulterants.

"To go to the root of the matter at once, we say that the finest soap made for (machine) washing linens and cottons is strong potash soap, made from pure potash, with tallow or oil; though strong, being from a vegetable alkali, it has not the slightest injurious effect upon the clothes, as would be the case with an equally strong soap made from soda; for woolens, flannels and delicate fabrics a neutral potash soap is the best, and makes these goods soft and fleecy, and sharpens rather than otherwise the delicate colors in fine goods. These soaps are soft, easily dissolved, and owing to their penetrative qualities they search out the dirt more effectively while using less than is necessary with hard soap; a little carbonate of potash to first soften the water is recommended in using these soaps. The above soaps are the best that a laundry proprietor can use; they keep the clothes white, and there is not the slightest injurious effects from their use.

Hard soaps made from tallow or olive oil come next; they appear to be more concentrated, being hard, than a soft potash soap, and many think they must go further. This is a mistake; they are undoubtedly more convenient in some respects, in handling for instance, and as manufacturers find, for packing; but they take longer to dissolve, and in comparison with pure potash soaps have a tendency to turn linen yellow and to give harshness to the fiber. In the finest soda soaps this is reduced to a minimum.

"Dry soap is a very useful form of hard soap, but it must be good; it must be soap with the lightest mixture of soda; many, I was almost saying nearly all, dry soaps do not come up to this test; some are like Ally Sloper's plum pudding, in which the soap represents the fruit. This position should be reversed. Being easily dissolved, dry soap expedites the work; it gives a soaking solution easily made either by cold or hot water; used in boiling it will also be found very serviceable; indeed, for most washing purposes it will be found convenient and useful, but get it good!

"Don't be led by lather! like many a man who splashes and froths but does nothing in the shape of work; there's many a soap manufactured to lather instead of to wash; a good soap may show very little lather and get through its work splendidly; this is often the case with soaps made under the cold process—they work well and they wear well; they are safe soaps to buy, for they require pure fats and pure soda to make them; soaps may, of course, be very good, and yet show abundant lather. My point is that it is the work done and not the foam that gives you the merit of the soap, so I repeat, don't attach too much importance to lather!

"Condensing my remarks as to the finest laundry soaps, I state that the best soap that can be used for machine washing of linens and cottons is strong potash soap. It is rather strong for hand washing, though, as we have said, it has not the slightest injurious effect on the clothes.

"For woollens, flannels, etc., use a neutral potash soap; it makes them soft and fleecy; clothes wear longer and keep their color better washed with pure potash soaps."

TALLOW PASTE SOAP.

To prepare from tallow a solid paste soap, smooth and of good texture, the following proportions are taken:

Tallow, 200 parts; cocoanut oil, 100 parts, are brought to the boil along with 180 parts of 10 degrees soda lye, and when combination has ensued 140 parts of 20-degree soda lye are added by degrees, boiling meanwhile continued.

After the second quantity of lye has combined with the soap, about 180 parts of 25-degree—26-degree soda lye are run in, and the soap is fitted, to a slight touch, with 26-degree lye.

At this stage it will boil very thick and viscid, and must, therefore, be salted out with 20-degree B. brine, so that a sample taken out with the knife will break short off, and no longer draw out in threads. The point is an important one, since the soap, if not short enough in the grain, will cut unevenly, although it may be solid enough. If the requisite shortness of fracture and cohesion of the soap, when dropped on a glass plate, be not attained, a little more 26-degree lye must be added. The pan is then covered up, and kept warm over night; next day the inch or so of scum on the surface is skimmed off, and the soap is transferred to the frames, where it is again crutched.—*Oil and Colorman's Journal.*

SOAP SOLUBLE IN BENZINE.

Ordinary soaps are insoluble in benzine, but Gertenmeister prepares one that this solvent will take up, by the following method: Water, free acid oleate of an alkali metal, containing two molecules of oleic acid, and one molecule of alkali, will dissolve in boiling benzine, but separates out, on cooling, as a gelatinous mass which, by thoroughly shaking up with successive small quantities of water, loses its consistency and becomes a solution of soap in benzine. The proportion of water is definite, and if a further quantity be added, the excess will separate out in drops on the surface. Acid oleate of soda requires 12 per cent of its own weight of water for the production of such a soluble soap.

The oleate may be prepared either by melting together a neutral alkali soap and oleic acid in molecular proportions by saturating oleic acid with a caustic alkali or carbonate, or by semi-saturation of neutral oleic acid soaps with stronger acids.—*Seifenfabrikant.*

THEY CALL IT IFOL.

According to one of our consuls, the Arabs of Northern Africa make an excellent laundry soap, which they call "ifol," from earth containing free gelatinous silica. It is capable, it is said, of absorbing five times it weight of heavy tar oil, and a French chemist finds that it may be used with such oil for producing an emulsion of great value for disinfecting purposes.—*Exchange.*

IS THE LAUNDRY AGENT NECESSARY?

CAN BUSINESS METHODS FOR THEIR CONTROL BE DEVISED?

(Prepared especially for, and read at the Interstate Convention of Indiana, Kentucky and Ohio, at Indianapolis, Ind., April 5, 1898, by I. N. Williams.

Some of us recall incidents in our own practical experience which, coupled with the seeming indifference of many who should be interested, have led us to wonder how it will be practical to secure business methods for the control of our agents.

The laundrymen, in their greediness for trade, each trying to rival his competitor by attractive offers, are making the trade of the agents more undesirable from the simple fact that such rivalry is robbing this branch of our business of its profits and making the questions involved more complicated.

Having had no experience with branch offices or agents in our own city, we can only speak of the agents who ship us work from the local towns by express.

These agents are quite generally boys with no other occupation. The fact that a debt can not be collected from a minor by legal process gives an explanation for much of the abuse with which the agency business is troubled. These abuses are more largely due to the fact that the laundrymen have thus far failed to take scarcely any precaution to protect themselves from dishonesty and irresponsible parties before committing to them their business and extending to them unnecessary time in which to make settlements for work.

We may say in defense of the boys, while they have often been made the subject of violent and unjust abuse, that as a class you will find them no better or worse than people engaged in other vocations. We have found that liberal treatment of them brings reciprocal appreciation, and if we are to secure the best class of agents we should treat them in a business way, and be willing to pay them liberally for services rendered, thereby removing to a great extent the temptation to become dishonest or take unfair advantage.

Where varied conditions control to so large an extent as in the agency business in the local towns, it is difficult, if at all practical, to arrive at a stated schedule of commission which would apply to all cases. I believe, however, that other matters involved in the agency problem are of far greater importance than the question of commissions, as I believe if this phase of the question is left alone it will come nearer adjusting itself than some of the others.

It seems to me quite necessary that we should adopt some general plan to secure, if not cash settlement for work, a system so nearly cash as to prevent the contracting of indebtedness by these parties in sufficiently large sums as to be an invitation to become dishonest by beating us out of good-sized bills and changing off to some other laundry. The commissions allowed, and the fact that these boys, as a rule, collect cash from their customers, does not warrant us in extending to them credit of thirty days, which is now customary, in which to make settlements.

There is a growing disposition on the part of the agents to have the laundry bear the burden of paying the express charges on all shipments, whether they are large or small; this should be corrected. Especially do I think it unwise to pay express on small shipments, which do not justify such expense.

The matter of deadhead work, since the organization of the state association, is not the burden it was prior to that time. Yet there are some who persist in this practice, notwithstanding the fact that all who have had any experience with it can testify that where deadhead work is done the package of the agent invariably becomes by odds the largest bundle in the shipment; such concessions always leading to abuse.

When it is developed that an agent is unworthy of confidence, we should not hesitate to blacklist him. Our blacklist, which should be revised sufficiently often to meet requirements, and such parties can be kept from preying on other laundrymen or be forced out of business. The blacklists have been so effective in our state since the organization of the association that there has been great relief, and losses from this source have been greatly diminished.

We especially urge that we reach an agreement on at least three points, viz.: Require all agents, without commercial rating, to settle each week for their work. Fix as a minimum three dollars worth of work net as the smallest on which express charges will be paid. Agree to pay express charges only one way on any shipment, and that no deadhead work be done for an agent.

Mr. Taylor: This discussion will not only bring out the points with reference to shipping work, but with reference to local work also. I would like to have it cover the question of our local work as well as shipping work.

Mr. Lyons, Danville, Ky.: I agree with Mr. Williams as to the necessity of the agent, and I will give you my reasons for the same. I live in a small city of 5,000 inhabitants, and we find it necessary to solicit agency work. The point I wish to make in regard to the agent is this. Take a small town; one man will put on a laundry shirt, his neighbor will notice it, and in that way every man will get to doing the same. In that way the agent is a benefit to trade.

I agree with Mr. Williams that we have too many small boys from twelve to sixteen years of age for agents. If we should engage men, and make it an inducement to them, we would get men to do it and it would be far better.

Mr. Wisner: I have been in the business for about eight years. I asked my friend Jones how he handled his agents. He said he allowed the agents 7 cents for shirts, and then he paid the expressage one way. I have never had to vary from that price. A man will write me that he can get his work for less money. I write and say: "I will not do it for any less." My experience has been that I have had less trouble with boys than I have had with men. I told the boys I would send them a basket of laundry this week, but if the money was not in for it I would send the basket C. O. D. You can scare the boys; you can not scare the men. I want to know if it can not be made a case of embezzlement.

Mr. Frazee: Cleveland is afflicted with the agency disease to about as great an extent as I have ever known. It is a question as to how to rid ourselves of this agency business. If we drop all the agencies, as we ought to do, they come up with the argument that some one will back up these agencies and take the work from us. There is no sore for which there is no remedy. There can be only one method to cure this sore, and that is a universal movement. The agent is simply the bloodsucker on the laundrymen.

Mr. McKeen: Mr. Irwin's losses and my losses last year were nothing. Our agents were settled with every Monday morning, with the exception of a few who settled once a month. Our out-of-town men sign a bond. They give as a bond two men who are not only in Dun's but are known by bankers. We make this bond large enough to cover twice his business in a month. If in that month he does not settle for his bills we go to his bondsmen, and he must go. Any man who will not give a bond is not worth having. We could have had several good agencies, but the men would not give bond and we would not do the business on that basis. We sell our out-of-town agents at a certain price; we do not give them a commission.

Mr. Irwin: In sending the first lot of work we send it C. O. D. and send the bond. If he does not furnish bond we send it C. O. D.

Mr. S. B. Waters, Cincinnati: In the question of the responsibility of agencies: In the state of Ohio no man can possibly beat a hotel or livery stable. It is a criminal act. Now, could not this apply to the laundrymen?

Mr. Williams: Our agency business is quite a per cent of our business—fully 50 per cent. It seems very foolish that laundrymen will give the profits to a class of agents who are merely bloodsuckers, but it is an entirely different matter when you have out-of-town business—when you can not do differently than to have a man act as agent. When we wish to give an agency the first thing we do is to go to Dun, and if he is not rated we look after him personally, and then make inquiry at the bank, and if he is not satisfactory the business goes along C. O. D.

Mr. Waters: The branch agency in Cincinnati has been a blessing to Cincinnati. I have one across from a laundry. They do cuffs for 10 cents a dozen and shirts at 7 cents, but they do not do the class of work I do. There are people who want to patronize laundries that have a reputation. They haven't work regularly enough to have my wagon deliver them, and it is too far from our office to carry them, but if I have a branch office they can take it there. I can deliver it there whenever I please and as often as I please. We pay these agents from 20 to 25 per cent. Through these agencies I get a trade that otherwise I would not.

Mr. McKeen: I think our city agencies help out in the way of a wagon. While we give them 15 per cent I do not think we could collect the same amount of laundry for the same amount with wagons.

Mr. Close: There is another picture that has not appeared on the scene yet. Within five or six years you may have worked up a trade of $15 or $20, 20 cents on the dollar, expressage one way. The agent is satisfied; no complaint whatever. A fellow comes in, buys a cigar. "Laundry agent?" "Yes." "How are you getting along?" "Got a nice little trade worth $3 or $4 a week; I do not notice that it hurts my time." "What does it pay you?" "Well, it pays me 20 per cent." "You ain't in it. I will pay you 30, and will do your own work free." Who is the leech, the agent or the laundryman? I tell you, gentlemen, the laundrymen make the rope that hangs themselves. We are responsible today for the things as they exist in Ohio.

Mr. Cox: The gentleman that has just taken his seat has spoken truly. The remedy lies within ourselves, and unless we apply the remedy we shall have no cure. We all of us have the same trouble with our local agencies, and will just so long as the laundrymen will not act honorably one to another.

HE MADE THE AGENT SETTLE.

A certain laundryman living in the prairie state of Iowa had an experience with one of those "sure enough" agents that has taught a good lesson. He arranged with a fellow in another county to secure all the work possible for him, and everything went along smoothly; bundles came and bundles went with regularity every week until the agent had contracted a debt of over $16. The agent was written about it and notified that unless he remitted with the next batch of work the basket would be held for payment. The wily agent, instead of sending another lot, held the basket. In fact, he shut up like a clam and nary a word could the laundryman get from him. At last patience ceased to be a virtue and the laundryman applied to the court for a warrant to bring the agent over into his county. The constable went after his man, but rather than face the laundryman in court he settled with the minion of the law, paying the laundry bill in full with costs, also prepaying expressage on the basket which he returned.

THINKS IT A DISCRIMINATION.

Editor National Laundry Journal·

I noticed a communication from Mr. Metcalf, I think, in regard to the license law for laundry agents enacted by the Tennessee legislature, and the above named gentleman seemed to think the same a hardship on himself and others doing an agency business throughout that state. I have been an owner or manager of laundries in both large and small places for the greater portion of the last twelve years, but have been located for the last six years in small towns where there were but one or two laundries. In my wanderings I have always found all the smaller ones unanimous in regard to agency competition. It is not legitimate competition.

A laundryman, in order to start in the business, has to invest from $1,000 to as high as he can go; the agent's total investment is a lead pencil and possibly a ball of string. Take my own case, for instance. I have two agencies for outside laundries competing against me. I do as good, if not better, work than either, but I have had some of my best customers quit on account of agents.

A street faker, or transient clothing merchant, comes here, and the city makes them pay a big license fee before they can do business. Why not make laundry agents do the same, especially in towns where there are laundries? They talk of discrimination in legislating against one class in favor of another, but I see the Louisville laundries pay $20 per year license and agents in same town pay $10. How is that for discrimination or class legislation? If this is good law I want to know it. Respectfully,

F. C. LAGERS.

* * * *

Some one wants to know how to treat with agents for outside laundries who sent work out of town. We have adopted a system to stop this that has had a good effect. We first got all the barbers, not agents for out-of-town laundries, to join us. and then issued the following circular:

FREE.

The gentleman sending me the largest package of laundry the week beginning ——— will receive a ticket entitling him to one dollar's worth of barber work at either ———, ———, or ——— shop as he chooses. This offer will be made every week. ———.

This worked like a charm and we made it warm for the other fellows who were sending goods out of town. This ought to be a good thing for others who have to compete with local agents for outside laundries.

WESTERNER.

GOOD HELP INDISPENSABLE.

The best washing machines in the market cannot do the work expected of them unless the washman is thorough and painstaking. He must not only be on the alert, watching the process of the washing, but he must know just how to place his goods in the machine, and also be thoroughly acquainted with the quantity of soap and other materials to be used, as well as the proper time for the run.

It is so in every department of the laundry. With first-class, experienced help, a laundryman can turn out the best work, even if some of his machines are not modern. Much depends upon the machines and supplies used, but really more depends on the class of help.

Nearly every laundryman has different methods of conducting their business. Some will not listen to the suggestion that only the best help obtainable is the cheapest, but are constantly on the lookout for the lowest priced worker. They say it will not take long to break in a new hand, and in the meantime they are paying beginners hardly enough to keep their bodies and souls together. But they are inadvertently paying dear for their apprentices. Go backs, rips, tears, and numerous other petty annoyances confront them, not to mention the never ceasing worry about retaining customers who are dissatisfied with the work.

It is a good laundryman and a practical, liberal business man, who can be made to understand this. The careless man, and the man who is trying to invent some new method whereby he can cut down his pay roll by offsetting it with poor work, is seldom a success in the laundry business.

TREATMENT OF LAUNDRY EMPLOYES.

Almost every business man who has made a marked success of his calling has possessed and exercised the ability to gather and keep around him a corps of good assistants. At first, the start and early development of a laundry enterprise is more or less a dependence upon himself; but as his custom extends and duties multiply, he is forced sooner or later to distribute his responsibilities to others. To know just what kind of employes to select, what duties to delegate, and to whom, and how to treat all in order to secure the best services, is something that every laundryman will find of the utmost constant use.

All laundrymen are engaged in the business to make money. No laundryman should feel obliged to keep in his employ any person who does not earn more than he (or she) receives; and it should be the studied endeavor of every employe to serve the best interests of his chief, and the best service can be given only when an employe works as if his employer's interests were his own. The rapid promotion of an employe who is not afraid of work; who is constantly suggesting where small leaks may be stopped; expenses lessened; trade improved; business extended, etc., is ample testimony to prove the truth of this rule—that an employe of this stamp is worth more than two of those whose main aim seems to end in putting in as many hours as he is obliged to do to earn so many dollars.

But while it is true that the value of an employe to his employer lies mainly in himself, yet very often the employer is somewhat to blame for the lack of the best results from his help. Instances come to mind of a young man who has left the service of one laundry for that of another and competing one. The reason is often that with the first one he could make but little progress, while with the second his promotion has not only been rapid, but well founded.

Perhaps one of the most important points in dealing with an employe is to have a definite understanding at the outset of just what is expected from him. Give him all the encouragement possible, but do not lose sight of what is due you in the way of results. By giving him a definite field to work in, you remove at once the main cause for little jealousies among employes. Yet these outlines, or the lines between the duties of employes, must be elastic enough to permit of suggestions being made for the best interests of the business, from whatever source.

A laundryman should command the respect of his employes. A cold shoulder should be turned to all familiarities with employes, especially females. Do not confound being reasonably social, and unreasonably familiar.

Assistants should be made to feel that their earnest efforts are being appreciated, and it is an employer's duty to know what they are doing.

Compensation of employes is one of the vexed questions which the average laundryman must contend with. While it is unquestionably right for the employer to say what he can and what he cannot pay for services rendered, yet it is his moral duty to allow himself to be influenced in these matters by a strict sense of justice, and justice only. Relationships, friendships, favoritism or sentiment should find no serious consideration whatever in these matters. When a young man feels that nothing stands between him and promotion except personal merit and personal accomplishments, he then has an incentive to push to the front; and it is then the employer's duty to see that he has credit for whatever rightfully belongs to him.

Have each employe engaged in the office or on routes make a monthly or bi-weekly report of what he has done. Knowing that a report of this kind is to be presented to his employer; an employe's pride and ambition will lead him to strive to make a good record. He becomes thoughtful, careful, ever on the alert to make a point toward good results. A laundryman who will use these reports, verify them from time to time, and lay himself open to suggestions from them, places himself both in a position to compensate his help justly, and to adopt improved methods in his business.

Confidential office men are becoming more and more of a necessity in every large business enterprise, yet it is difficult to find them. The ideal confidential employe is some one who can be trusted under all circumstances, who is not afraid of work, who watches the interests of his chief as if they were his own, who has good habits, who can be relied upon at any and all times, and whose word is always the whole truth and nothing but the truth. The extent to which a laundryman shall take an office employe into his confidence must be decided by himself. There is always the liability of a man's becoming dissatisfied and going with a competitor. This cannot always be avoided; and under such circumstances, it is not good policy to let men know more about your affairs than is necessary to the best discharge of their duties. Unnecessary knowledge can do an employe no good, and it may do an employer great harm.

When a laundryman engages an employe, he agrees to give in exchange for certain services a certain compensation; and if the employe insists upon his salary, the employer has the same right to insist upon the services he bargained for. Punctuality in commencing work should be insisted upon. Many a piece of work goes elsewhere from the laundry that is not opened at a reasonable hour in the morning. Better be a half hour early than three minutes late.

Dissatisfied employes will appear at all points in the laundry business—satisfy them or let them go. It never pays to keep an employe after he becomes dissatisfied beyond helping. It does not pay to expect infallibility from the employes of a laundry. Don't expect them to refrain from making any mistakes; they certainly will do so from time to time—all men do. When they make a mistake, don't forget all about their good qualities; these often offset the other.

A laundryman should never lose control of his temper under even the most aggravating circumstances. A business man cannot afford to give way to his passion; as soon as he does, he loses control of the situation. Neither can a laundryman afford to employ uncivil and disrespectful help; he should insist upon personal neatness, pleasant address; should discourage profanity, lounging, the use of tobacco, gambling and gossip. The absence of these qualities gives character to an establishment, and draws a better class of patronage. A customer never objects to good character, and may take offense from the opposite.

ORDER IN THE LAUNDRY.

There is hardly any one thing that will help the laundryman so much in the estimation of his patrons—aside from the mere fact of doing good work—as the appearance of conscious orderliness throughout the entire establishment. In every laundry in the land, without distinction of size or location, the genius of order should assert itself in a manner easily perceptible even to a chance visitor unfamiliar with the business.

It is true that this occupation cannot be pursued with immunity from steamed faces and soiled hands on the party of some employes, but the same thing may be said of the sculptor as he molds and models beautiful things out of clay. Soiled hands and steaming faces are never out of place when they are unavoidable results either of useful industry or artistic work.

But order does not consist in these things alone; disorder covers an entirely different range of thought. Confusion in arrangement, cluttering things, the habit of leaving articles out of their proper places, imperfect light from the outside as the result of the neglect, of dust and dirt on windows, defective ventilation, and like examples of carelessness or indifference, are all to be as much deprecated in a laundry as in the artist's studio.

FOR BEST RESULTS.

SOME MUST GOVERN; OTHERS OBEY.

There are few employes who do not look forward to the time when, if they remain in their present honorable and useful branch of the world's work, they will either hold some interest in the enterprise with which they are now connected, or own and manage a business of their own. That every such young man should look forward to this end, and use all his energy to push himself into such a position, is very natural and for all the best, but the percentage of employes who become managers is not very large. There are very plain reasons for this state of things, and this short article is written to lend encouragement to those who may have reached that point in their work where they do not see the path ahead widen out as much as they could wish.

The largest establishments in our trade have not been built up, as a rule, by combinations of the abilities of several men, but in this respect a laundry is vastly different from the average business corporation. Even where there are several people interested, you might think equally, in the enterprise, you will generally find that there is one among them who is really about as much director and master as if the others were only so many employes. And instead of thinking to yourself, as you may feel disposed to do, that these men must have been "soft" to have allowed themselves to be thus controlled, you may perhaps be more right by putting it down to their credit that they were wise enough to let the best man lead.

A wise manager naturally wants just as few partners, or business equals, as he can possibly get along with. If he has a genius for his business, he can mark out lines for others to carry out; and in a majority of cases, the latter can be accomplished better by an assistant than a partner. Those of you who are now assistants and may later become managers will then reflect this truth, and see more meaning in it than you do now. The amount of friction generated in business partnerships is hardly understood by those who have had no experience with it. But when a laundryman turns to an assistant and says: "I want this done so and so," he knows that the assistant will have an interest in doing it well, and in being successful, lest the failure, if that occur, be laid upon him. However well the arrangement of duties between assistants and partners, there should be, in every well-ordered laundry, one mind that is supreme. The writer of this article is only an assistant manager, and feels that his work and his will is subject to another directing force, until, perhaps, in the course of time, he has a laundry of his own.

It is the very nature of things that there shall be more assistants than managers, and while your constant aim should be to push yourself up toward the ranks of the latter, you should not overlook the fact that your place may be among the ranks of the subordinates for a great many years, or perhaps it is to be always there. And if you are to be an assistant for these years, or for always, there are two points that it will pay you to look well after; first, that you shall be so proficient in your position that you can be reasonably sure of a steady place; and, secondly, that you systematically save a part of your income for the ever possible period of need or inability to work.

The man who is surest of steady employment is not the one-idea man; such a one is like a peg which can only fill one particular hole, and he may search in vain for months or years for just such a position as he has lost.

Now, it is the experience of almost every laundry manager that the man who can fill several places, if occasion requires, is the most valuable of all in the establishment. It has been well said that "the most valuable man is the emergency man." Such a one is seldom allowed to be out of work for any great length of time. If, through some unexpected turn of the wheel, he loses a position in one capacity, he is ready for the first vacancy somewhere else. In a small establishment, under which head three-fourths of the laundries of the United States could be placed, there is no difficulty in becoming thoroughly informed about every department of the concern. It is very seldom indeed that there is an employer so shortsighted as to be unwilling that his employes shall learn everything which their eyes and hands can teach them. More usually it is the willing manager and the indifferent or unwilling assistant.

The salary of an employe of a laundry is either a blessing to him, or a curse, whichever way he uses it. If he spends every cent of it, knowing that he is going to have just so much to spend, it is a curse to him. But if he has the wisdom to guide his expenditures so that he can save something every year, then it is a blessing to him, for it enables him to regulate his wants, and is a protection against the ills that follow in the wake of lack of employment or inability to work, against which none of us are able to make ourselves proof.

OFFICE ASSISTANT.

WHO IS TO STAND THE LOSS.

The following letter will explain itself:

Editor National Laundry Journal:

Kindly advise us what the custom is in laundries when some of the help ruins or tears a shirt or other articles. For instance, the washman fades a piece of goods, a shirt; who should pay for the damage—the proprietor or the washer? What is the general custom regarding such things in other laundries.

Yours respectfully,

Star Laundry Co.

While we are on this subject, we will include losses by the driver, in the sorting department, or elsewhere, while in the hands of employes of the laundry.

If one is engaged to fill the position of foreman of a laundry, or of any department in a laundry, it is implied by his acceptance of such a position that he is competent to fill the same, and if any damage comes to the goods that go into his hands, through incompetency, we would consider it fair that he should make such damage good.

If, however, a hand is employed to work in a laundry, without any regard to previous knowledge of the business, but merely employed to do such part of the work as may be given her, or him, to do, and to do it as instructed; and, through lack of knowledge or experience on the part of such person, damage comes to goods that may be placed in their hands, through no particular fault of theirs, such as disobedience of, or deviation from instructions, we would not consider the employe liable.

In the first mentioned case the employer pays for knowledge and experience, in way of larger wages to the foreman, or head of a department; in the latter case the employer pays in wages to the helper, merely for help or assistance; and in the loss or damage sustained from any lack of experience on the part of such helper, he is paying for the experience that such helper is getting, and such loss or damage, added to the wages of the helper, will probably, on the average; make such help cost no more than would have been paid in wages if skilled help with experience sufficient to avoid such losses had been employed.

The chief causes of losses and damages to wearing apparel in the laundry are carelessness, inexperience and ignorance. Three-fourths of these occurrences are probably due to carelessness, and in such cases, where the evidence is plain as to the guilty party, there is no doubt as to the justice in compelling them to make good the loss. The evidence of guilt is frequently difficult to obtain, however, and in many cases cannot be had at all; in such cases the proprietor must stand the loss.

A CO-OPERATIVE DIVIDEND.

The Topeka, Kansas, Co-Operative Laundry Co. declared a dividend of $262.26 to its employes, the result of the work during the months of July, August and September, and payable December 20, 1899. This was the first quarter's dividend after the announcement that such would thereafter be paid employes, and it came with an agreeable surprise. Under this plan one-half of the profits go to the owners, and the other half is divided pro rata among the employes in proportion to the amount of wages they are receiving. It has been an incentive for all in the employ of the laundry to work steadfastly and not give cause for complaint for any reason. Mr. J. W. Ripley, manager of the laundry, thinks that they have struck the keynote of a better understanding between employes and employers, and thinks if others would adopt the system, beginning with the new year, they would accomplish better results as long as it was operated.

BECOMING TOO DICTATORIAL.

Laundry workers and other unions, mostly "other," are beginning to dictate pretty severely to the owners of laundries wherever there is an organization. In Green Bay, Wis., they tried to compel a laundryman to close his office at 7 o'clock p. m. when he himself was the only one who labored after that hour. A laundry office, in some localities, must be kept open a much later hour than the workrooms to accommodate customers who desire to leave or get a bundle, and who are unable to time their visits earlier. Now, if the members of unions—and we refer in particular to those who are not laundry workers—would devote more energy trying to stop patronizing the Chinese laundries, they would do more to benefit their order, and assist the laundry workers, than by such little mean and contemptible acts as the one referred to at Green Bay. If this practice is kept up they will drive laundry workers out of the union.

MALE VS. FEMALE HELP.

There seems to be no good reason why boys should not make as good and competent help for the laundry as girls. To those who find it difficult to secure and retain a plentiful supply of girls the experiment is well worth a trial.

Girls, in nine cases out of ten, enter industrial employment with the full expectation that it is a temporary matter at best, while boys are looking forward to a life of industrial or commercial employment to the end; and that means, in ambitious ones, a desire to improve in knowledge and experience, consequently in value to themselves and their employers.

Again, the modern laundry is very largely a mechanical employment, and in that respect quite the contrary in nature to the domestic work of the primitive hand laundry; and though by association of ages the domestic relation still clings to it, the work of the modern steam laundry is in reality a mechanical industry to which man is more fitted and more valuable than woman.

A RELIEF ASSOCIATION.

The employes of the Wilson Laundry Machinery Company, Columbia, Pa., organized an accident relief association with the following officers: President, B. Frank Kauffman; secretary, George Frank; treasurer, E. G. Smith; examining board, Eugene Conley, Joseph Eicherly and C. W. Bartley. The members were assessed 25 cents per month. The rate of three dollars per week has been fixed.

THE AMERICAN WORKWOMAN.

DREADING DOMESTIC SERVICE, SHE HAS BOLDLY ENTERED MANY PROMISING AND PROFITABLE VOCATIONS.

(Written expressly for the National Laundry Journal.)

The female laundry employe is the typical American workwoman. No other one field of activity, except it be some special branch of factory work, calls for an equal amount of muscular exertion and manual dexterity. Such other manufacturing as employs women in large numbers, is confined to a few industrial sections of the country, while laundering is an occupation as wide as the limits of our national territory. With this idea in view, the following facts, compiled with great care expressly for the NATIONAL LAUNDRY JOURNAL, may be of interest and value, both to managers and workers.

By careful study of the matter, it is not difficult to see why, as a class, American women have forsaken domestic and menial service, and sought other less restrictive and disagreeable, and more independent vocations. Incidentally, we shall note the special reasons which have operated to bring so many of them into the laundries of this country.

The census of 1890 gives a total of 3,745,123 men and 846,614 women employed in the manufacturing, mechanical and other industries of the United States, under which general head the laundry business would be considered. From 1850 to 1890, the number of women employed in these capacities increased by 270 per cent, and that of the men by 412 per cent.

The wage of woman is, in all countries, and has been at all times, inferior to that of men. A very large proportion of American women consider their earnings as a supplement of income rather than a portion of the principal household fund, and that is one reason why they are less exacting in the matter of their wages. With certain exceptions, the number of which is, however, on the increase, women workers have not hitherto been organized, like men, in order to give force to their claims.

It can scarcely be said that the relation of female wage to masculine wage is exactly in proportion to the productivity of the work. They are paid on the same scale in certain work, such as weaving, and if they earn less during the week in these cases it is because they do less. In certain trades, where they are able to take the place of men, they are sought after, not only because they work cheaper, but because they are more manageable, and far less inclined to indulge in disturbances or strikes.

One of the recent reports of the Commissioner of Labor for the United States is devoted to woman's work in twenty-two of the great cities. The lowest average rate which exists, at Atlanta, Ga., is $4 per week, and the highest, at San Francisco, Cal., is $6.91. That of New York City is $5.24, and the general average of the cities is not far from that figure. The date for these statistics relates to the year 1887.

From some other statistics which the bureau of labor had previously published, it might be gathered that, from 1880, a slight increase in the wages of women had taken place. The women were young, the average age being 22 years and 7 months. These women usually begin at 15½ years and the age of 18 usually supplies the largest relative number. They do not remain on the average over five years in the workrooms or shops. It is thought that these callings, far from hindering, even facilitate their marriage. The International Union of typesetters, which has admitted women since 1869, has adopted the principle that women should be paid exactly on the same scale as men. The manufacture of toys and games is among the industries in which women receive the highest remuneration, over 35 per cent of the workers in those lines earning $15 or over per week.

On the other hand, out of 200 workwomen, 34 at Chicago, 43 at Philadelphia, 54 at New York and 60 at Baltimore earned less than $5 on the average per week.

According to the census of 1890, out of 100 females over 10 years of age, and following a calling, 42.6 were in the group of domestic and personal service; 26.3 in that of manufactures and industries; 18.4 in that of agriculture and mining; 7.9 in the liberal professions, and 5.8 in commerce and the transportation service. It is true that the 4,366,506 women classed under "domestic and personal service" belong to widely different categories; "servants" alone figuring for 1,205,876.

An American woman, when asked why she preferred the regular wage of the laundry to that of the servant, answered: "Because we are our own mistresses when our work is done. I know several servants; they can go out on Thursday afternoon, and for a part of Sunday, but they cannot reckon on a minute's freedom when they are in the house.

Women are always harder on a woman than men are. There are some good places, but more bad ones. A young workwoman in a laundry well known to the writer had tried domestic service, but gave it up at the end of the year because she could not endure the solitude of her own room, and her mistress never spoke except to give an order or administer a reprimand.

Another would not stay, first, because her mistress rang twenty or more times during the day and night for mere trifles, making her come up two or three flights of stairs, and also because she had no place except the kitchen in which to receive her friends. "Well born and brought up as I was," she says, "that could not suit me." Another reply ran thus: "We were poor in our own home, but at least we each had a small room for ourselves, while in the splendid house where I was a servant they had only one room for the four of us, and that was over the kitchen, with only one wash-stand."

The American woman naturally does not like domestic service. She does not like it on account of its arduous duties, and on account of the low estimation in which the position is held by her friends, associates and public at large. Therefore, the newer among the emigrants supply this service, and they themselves show a tendency, as they become Americanized, to seek other walks of life.

The wages of women working in American laundries range considerably above the average of those for all kinds of female labor. The work is detrimental neither to health, strength or longevity. And, what is more important, laundry employment is more regular than that to be obtained in a vast majority of other industries and occupations.

MANAGER'S ASSISTANT.

WORK AND WAGES.

SOME FIGURES GIVEN THAT WOULD ASTOUND THE LAYMAN —"EXPERT" SHOWS HOW THE WORK AND WAGES COULD BE MADE TO AGREE.

(Written expressly for the National Laundry Journal.)

In the subject of "Work and Wages," laundry proprietors are very much at variance as to what a fair day's work is. In some laundries no notice is taken, and no record kept, of the amount of work done by each individual, while in other laundries those in charge can tell how many pieces are washed, starched, ironed or mangled each day, with the quantity of material consumed in doing it.

The simple fact that it is known that you are taking stock of the amount of work done, and the starch, soap, blue, etc., used in doing it, has a wonderful effect in reducing the quantity of cold starch dumped into the sewer, preventing a worse than useless overflow of costly soapsuds, and the disinfecting of all the drains in the neighborhood with chlorine at your expense, etc., etc.

Let the engineer estimate the amount of coal, oil, etc., consumed each day; the washman weigh out the soap, potash, borax, bleach, etc., he takes from stock; the starcher the quantity of each kind of starch used; the bundlers the pounds of paper and twine used, handling these to the bookkeeper for summing up and registration, and the result in dollars and cents saved at the end of the year will surprise those who have never tried any system of daily or weekly returns.

WORK AND WAGES.

We will now come directly to the subject in hand, by giving a few estimates of a day's work based on actual results, obtained in various laundries, and under different conditions, with the cost for labor.

One washman attends to engine and boiler, does all the washing, most of the wringing—woolens and other hand work excepted—in a laundry running four washing machines, and averaging $300 per week, including $50 worth of flat work, all at standard prices, for which he is paid $12 per week.

Another washman who is a licensed engineer and can also do some repairing, in a laundry doing $250 per week, is paid $15.

A washman and engineer doing the washing and firing the boiler in a laundry having a trade of $150 to $200 per week, receives $12 per week.

Two men and a lad attending to 14 washing machines and two extractors, in a laundry averaging over $800 per week, receive $8, $7 and $6 respectively.

Engine, boilers and machinery is attended to by a machinist and assistant, who acts as stoker. The former is paid $15, the latter $6 per week.

WASHWOMEN.

In a large plant two women are kept busy on woolens and other articles that are required to be washed by hand, and are paid $5 and $4 respectively.

In a laundry doing $300 per week the washwoman receives $1 per day, her duties being manifold.

STARCHERS.

Two girls starching by machine and wiping off 60 shirts per hour receive $6 per week each.

In a laundry where several girls are employed starching and wiping off by hand at the rate of 25 to 30 shirts an hour for each, $4 per week is paid.

One man and two boys starching by machine and wiping off 4,000 shirts per week, are paid $7, $6 and $5 respectively.

Four girls do the starching of shirts, collars and cuffs in a laundry averaging $300 worth of work per week, and are paid $6, $5 and $4 respectively.

IRONING.

One operator on bosom machine, ironing 1,100 to 1,300 bosoms per week, is paid $4.

A damsel operating a machine of the latest pattern irons 75 to 100 bosoms per hour and gets $5 per week.

A girl operator ironing 60 to 70 bosoms per hour is paid $6 per week.

A male operator ironing on an average 600 bosoms per day is paid $10 per week.

COLLARS AND CUFFS.

Four girls ironing collars and cuffs on a machine of the largest capacity, at the rate of 30 to 40 dozen per hour, including dampening by machine, shaping, turning and finishing, are paid $6, $4 and $3 respectively.

Two girls iron on a machine for two operators at the rate of 15 dozen per hour, dampening in sheets, shaping, turning, ironing edges, etc., are paid $4.50 and $3 respectively.

One girl irons at the rate of 10 dozen collars and cuffs per hour on machine for one operator, and is paid $4 per week.

FINISHING, IRONING BODIES, ETC.

Finishers of shirts after ironing by machine are paid $4, $5, $6 and $7 per week in different laundries.

A woman engaged in ironing ladies' fine clothes and starched work is paid $6 per week; in another laundry for the same work $5 is paid, the value of the work done being from $4 to $6 per day.

A girl ironing flannels, aprons, coats, etc., to the value of $5 per day, is paid $4 per week.

A woman finishing and folding ladies' clothes, dresses, aprons, etc., after they have been ironed on body or ladies' clothes ironing machine, the value of the work done being $7 to $9, is paid $1 per day.

Body ironing by hand at the rate of 15 to 25 shirts an hour is paid for in different laundries at $4 and $5 per week.

One girl irons at the rate of 60 neckbands an hour on machine and is paid $3 per week; another girl gets $4 per week for ironing 35 to 40 neckbands an hour. In another laundry a girl irons from 75 to 100 neckbands an hour and is paid $5 per week.

A girl irons 35 to 40 bodies an hour on 30-inch body ironing machine and gets $4 a week. A woman ironing 40 to 50 bodies per hour on 36-inch body ironer is paid $5 per week.

Unfortunately the volume of business fluctuates considerably from day to day, or week to week. In quite a number of laundries the staff of hands employed could do the week's work in three days if kept going steadily. As it is, one day they do a fair day's work, the next they are "killing time" and the third everything is rushing, and often a few hours' overtime are required to get the day's work out, which a little figuring would disclose was not an average day's work after all for the number of hands engaged on it.

One hundred dozen of collars and cuffs dampened, ironed, shaped and finished costs one man $1.50, while another has the same amount of work done for less than half that sum.

Every employer and manager of laundry help should know what a fair day's work is and exact the same from every employe receiving a fair day's pay. What a fair day's work should be depends very much on the quality of work expected. An operator on a bosom machine cannot iron 125 bosoms an hour and do good work, but 75 or 80 bosoms can be nicely ironed in that time. On the other hand, no employer can afford to pay a fair wage, reckoned by time, to an operator who takes an hour to iron 30 or 35 bosoms; and it is the same with all the other work in the laundry, whether hand or machine. Good work takes time, but don't leave it to your help to say what time it should take to do a stated amount of work. Their time is your money, and it pays to keep a record of how it is spent.

PIECE WORK.

Piece work has many features that recommend it as a fair and mutually advantageous method of paying laundry help. It enables employers to pay better wages, as fewer hands will do the work, do it better and do it quicker. It also reduces the payroll, bringing the cost for labor into conformity with the value of the work done. The employer or his representative, the foreman, does not require to be so everlastingly on the watch to see that everything is going right. Defective work that has to be redone means a loss to the employe as well as to the employer. It is therefore to the operator's interest to do good work and to call the attention of those in charge to faulty work on the part of others before doing anything to it; and in many other ways piece work is an entirely satisfactory and equitable system of paying laundry help.

The following scale for piece work is suggested as a basis by which to fix prices that will meet the requirements and labor conditions of any particular locality. It is not necessary in adopting the principle of piece work to pay all the help in that way. Some laundries only pay the hand ironers by the piece, others pay the machine operators and hand ironers by the piece. Washmen, engineers, washwomen and markers are generally paid by the day or week.

SCALE OF PRICES FOR IRONING.

An expert operator should do first-class work and make fair wages at ironing.

Bosoms of all kinds at 2 to 2½ cents per dozen.
Neckbands, 1¼ to 1½ cents per dozen.
Wristbands (in pairs), 1¼ to 1½ cents per dozen.
Bodies, 1½ to 2 cents per dozen.
Sleeves (pairs), 1½ cents per dozen.

Shirts, ironing neckband, bosom and wristbands on one machine, 3 to 4 cents per dozen.

Bodies and sleeves ironed by hand, 5 to 7 cents per dozen.

Ladies' clothes ironed on machine and finished and folded by hand, 6 to 7 cents per dollar's worth of work done.

Ladies' clothes ironed by hand, 12 to 20 cents per dollar's worth of work done.

Underwear, 6 cents per dollar's worth of work done.

Collars and cuffs, including dampening by machine or in sheets, shaping, ironing edges, etc., on machine for one operator, 1½ cents per dozen.

On machine for two operators, ½ cent per dozen.

On machine of largest capacity, 1½ to 2 cents per hundred to head operator and 1 cent per hundred to two or three helpers.

STARCHING.

Shirts thoroughly starched by machine and wiped off perfectly, 25 to 30 cents per hundred.

Shirts starched by hand and wiped off, 35 to 40 cents per hundred.

Collars and cuffs starched in dip wheel, stripped and wiped off by hand, 1 cent per dozen.

Finishing collars and cuffs after being starched and wiped off by machine, ½ cent per dozen.

Waists same as shirts.

In laundries not running continuously from Monday to Saturday, or having less than five days' steady work per week, the ironers should starch, and the starchers iron, to suit the work. Piece workers are also required to keep the floor, etc., clean. Piece workers don't yawn, grunt and weary for 6 o'clock to come around. If there is anything to be made after 6 you can depend on them putting all prior engagements aside for the occasion.

EXPERT.

HOW RATE CUTTING CAME ABOUT.

Up to about 1890 there were few laundrymen in the country who had the temerity to materially cut rates. About that time there was an increase in the number of laundries to such an extent that something had to be done by some of them to secure enough trade to satisfy. The competition was keen for work, and there were, in large cities, numerous commission men hounding the public for their work. It was then the idea of cutting prices began to enter into the business.

Then the question of local associations began to be agitated, and for a time these increased rapidly, but after a while it was found that there were black sheep in their fold, and as a result some of the organizations were disrupted. Some laundrymen flatly refused to make a general cut in prices, but reduced their lists on a few articles for the purpose of securing the shirts, collars and cuffs. All in the business have as a sequence felt the results, and we do not know of an exception. Many stood it as long as possible, and saw their trade rapidly slipping through their hands. They tried to stop it by legitimate and fair means, but had to enter the list of "cut-raters."

In Chicago prices reached their lowest tide when shirts were laundered at three cents. It was a body blow. The four-cent men then were the ones to howl. The old standard price men who still kept it up to ten cents did not worry, for they thought they could see the problem solve itself and the bottom fall out entirely. But did it have any effect? The cut-rate signs still continued to wave in front of all kinds of little shops, in every conceivable part of the city, just the same as ever.

IT IS TO BE DEPLORED.

GREAT HAVOC IN THE TRADE CAUSED BY LOWERING THE PRICES BELOW THE OLD STANDARD, WHICH WAS NEVER COMPLAINED OF BY THE PUBLIC.

American laundrymen are not the only ones who are apparently striving to ruin themselves and the business in general by lowering the prices for work. In England there seems to be a similar epidemic, and the legitimate patrons of these laundries, as in America, do not demand it, either.

The strife for trade has created the impression in the mind of the public that the price charged for work has heretofore been too high, consequently they complain to those who have kept up the prices that they are swindlers.

The Laundrymen's National Association has never cared to have brought before it at any of its sessions the question of prices. Essays are written and read on the subject, but no further action is taken, and perhaps this is all right. The association was not organized on that basis. It was for social and personal advancement of the members and elevating the condition of the trade among other lines of business, and it leaves every member a free agent to act and do as he pleases in his business.

The plan that suggests itself to all fair-minded men in the business is to insist on organizing a strong local association, and binding themselves together in such a way that there will be no backsliders. If there are members that are cutting the prices, never accuse them of it. They will gradually see the error of their way and eventually have pluck enough to come up to the standard price for good work.

THEY WAIL WHEN TOO LATE.

LAUNDRYMEN WHO HAVE BEEN CUTTING PRICES SEE THE ERROR OF THEIR WAYS AND ARE READY TO QUIT.

There has been a great deal of grunting among men who have been conducting cut-rate plants. They have struggled with a load that has surely broken their bank account as well as credit.

We lately took especial pains to get a candid expression from a number of Chicago laundrymen who have for two or three years insisted on doing work at cost, or less, and all were of the same opinion that "cut prices" did not pay.

One laundryman, who has been in the business for many years, and who up to the time he decided to cut prices was fairly successful and made some money, decided to try to increase his trade by increasing his facilities. He was discouraged at the results, and said so in plain words. "If I could sell out and get clear of the business entirely, even at a sacrifice, I would do so to-day. I am thoroughly discouraged and have been tempted to turn the key in the door and let things take their own course. Raise the prices? Why I couldn't now if I wished. I might, though, close this place and start another plant somewhere else, with the old standard prices, but still I can't see how I would be able to make it pay."

Another said: "I have tried my best to get all the work possible at prices that would have astounded the trade four years ago, but I have been unable to make a cent out of it. I do a large volume of work, but the expenses eat up all the profits. I can't imagine the remedy, unless it is we get together and formulate a plan whereby all will raise the prices at the same time."

"I have lost from $50 to $75 every month during the past year," said another, "but I couldn't help it. I had the plant on my hands and was unable to find a purchaser for it. Every time I showed it to a prospective buyer and told him the prices I was getting he would turn on his heel and say, 'I don't want a cut-rate plant, no matter how long or well it may be established.'"

We might cite a dozen other complaints of the same kind, but there would be no use in doing so. The men who are doing this kind of work are the very ones who refused to have anything to do with an association of any kind, consequently they have been compelled to resort to every method to keep their laundries moving.

PRICES AND PRICE CUTTING.

MISTAKES MADE BY THOSE ENTERING INTO THE BUSINESS—HOW TO SELECT A LOCATION—THE EQUIPMENT AND MANAGEMENT.

(Written expressly for the National Laundry Journal.)

Competition may be the life of trade, but it has been the death of several laundries within the past few years.

A mistaken opinion of the business qualifications requisite to the successful management of a steam laundry and the profits to be derived from the pursuit of the business, is very prevalent among the public in general, and many a healthy, wealthy, happy man got into the laundry business while laboring under some such delusive idea, and very soon got out of it again, a sadder but a wiser man.

It takes brains, money, experience and business education, in conjunction with plenty of "gall," to make a successful laundryman, although there are instances of men possessing only the first and last who not only made a success at steam laundering, but left many of their better equipped competitors behind them in the race.

Some people hold the opinion that there are too many laundries now in existence. Doubtless this is true when applied to certain cities and sections of the country.

CHOICE OF A LOCATION.

In choosing a location in a large city, give the preference to a ward or district which has no steam laundry in it and is a residential locality or store center.

In large cities, the bounds of which are continually extending, there are periodical openings for the enterprising business man, with capital at command, who can equip a laundry having the facilities and capacities to turn out high-grade work in large quantities; while for the small capitalist, who can only put in as much machinery as will do a trade of one hundred to two hundred dollars per week, the smaller town offers the best opportunities.

The large, well-equipped laundry can do the work at a cost 33 to 35 per cent under what the small laundry can turn it out at. The large laundry can also do better work, quicker work and suit their patrons' tastes and demands in a manner that the smaller concern finds it impossible to do.

The number of small laundries that change hands, go out of business, or do both, every year in our large cities, should be sufficient evidence to show the inadvisability of going into business on a small scale where competition is keenest.

Where a particular city has been decided upon, and the conditions in regard to competition, ratio of population to laundries, etc., are adverse, the purchase of an already existing business and the investment of some additional capital in the same, supplementing the facilities by adding machinery that may be lacking, or replacing old machines with new, can generally be effected, and is much more likely to prove a profitable investment than an entirely new business would be under the circumstances.

There are exceptional conditions which should be taken into account in selecting a location. For example, a population with but 10 per cent of the refined elements of society, who wear a white shirt occasionally, would not support a laundry of any kind, nor would a Southern town of five or six thousand, where the colored people outnumbered the white. Further, a town of six thousand having a nearby or trading population of double that number would support several steam laundries, while a smoky manufacturing town will produce more steam laundry work than a much larger place where few of its citizens are ever smoke-begrimmed, and the atmosphere is comparatively pure and clear. EXPERT.

AN ALLOPATHIC DOSE FOR PRICE CUTTERS.

Editor National Laundry Journal.

There are two Chinese laundries here and they are doing shirts for 7 cents. We have been trying to have them come up to our price, 10 cents, but cannot get them to. Three cents cuts quite a figure with a good many here and we would like to know some way to make them come up or get the trade away from them. The other steam laundry here has cut to 8 cents, but before we come down we will run on half-time and play cards the other half, and then we will make as much as if we cut prices.

Respectfully yours,
Palace Steam Laundry Co.

* * *

While we cannot, with our lack of definite knowledge of the circumstances surrounding the particular case cited, advise definite action, we will herewith give our views on the matter in a somewhat general way.

OF TWO EVILS, CHOOSE THE LEAST.

In troubles of this kind the difference between losing half the price to maintain the amount of business, and of losing half the amount of business to maintain the price, is, that when the trouble is over and prices have been either restored or adjusted, the one who determined to retain his business and meet any price that a competitor might have made, is in a much more desirable position for prospective success than he who has attempted to maintain the price, and in doing so lost half of his business.

Everything else being equal, it is poor business policy to let a competitor undersell you as a regular practice. If you allow him to continuously furnish an article when quality is fully taken into consideration, at a price much lower than the price you ask, you are making a mistake. You are neither exercising your privilege to protect your own interest, nor performing your duty in protecting the interests of others, if any, that are immediately depending on you in the business in which you may be engaged, nor are you doing your duty as a business man in general business ethics.

PRICE CUTTING LEGITIMATE; BUT—

Strictly speaking, price cutting is legitimate. So are some other ways and means of gain that are considered unfair, or disreputable. If you are unfortunate enough to be or to become a subject of such action, that threatens to destroy or injure your interests, you are expected to protect those interests, and justified in adopting means for protection which you would not otherwise use or approve of if used by others.

We do not wish to be understood as upholding the price-cutter, nor advocating a reduction of price for the purpose of securing business, but on the contrary we are decidedly opposed to such a policy and have no time for those who practice it; but the question we are writing on is one of defence, not offence.

One's business is generally the result of time and toil; it is property that he is both justified in protecting and expected to protect; and if in protecting it he is obliged to use such ways and means, and in the use thereof harm is caused to his neighbor, or to any other innocent party, he is as free from blame or responsibility as he would be in likewise protecting any other property.

PRESCRIBE HIS OWN MEDICINE.

There is an old saying that "To fight the devil successfully you must use fire," or words similar in effect. Offences and their attending circumstances are such at times that the weapons used in the offence are the most advisable and effective to use in defence; and this will apply, at times, to the practice of price cutting.

In illustration we cite a case of attempted highway robbery. An officer of the police department was going home late at night in citizens clothes when he was overtaken by two persons, who ordered him to throw up his hands, presenting revolvers to enforce their orders. With the instinct of his occupation, and with dexterity, he drew his own weapon, but in doing so drew a shot from one of the highwaymen, which, however, while close enough to burn his face slightly, did no further injury, but in return he quickly put a ball through the head of his foe, from which death shortly followed, the other robber taking to his heels at the show of resistance and the firing of the first shot. Here we have a case in which the defender not only exercised his privilege of self-defence, but did a valuable duty and accomplished unmeasurable good to society in general by discouraging future highwaymen. Had he in so doing harmed an innocent party no blame would have been placed on him whatever.

FIGHT FIRE WITH FIRE.

Another illustration justifying our position is the prairie fire. The law forbids the starting of a fire on the prairie at certain seasons and even condemns the carelessness by which such fires may be started. Still when one discovers that his life or property is threatened with the approach of such a fire, his best defence is to burn the prairie grass about himself or his property, for as great a distance and as quickly as he can. If the wind is blowing hard prairie fires travel with wonderful rapidity and in such a case he must take what he would save and follow the fire which he has started.

As in the case of attempted highway robbery cited, a drastic, most effective, retaliation in price cutting may often be found to be the quickest as well as the least expensive remedy. Hesitation at first, and slowly, half-heartedly following the price cutter in his downward course, is likely to prolong the period of the trouble, and so lengthen hours of work, reduce wages, and other expenses, that it brings about a disposition to resign to the enforced circumstances, and in a measure establishes a concurrence on the part of the laundryman, in the belief formed by the public, that laundry work can be done at much lower prices than it really ought to be done at.

AN ESSAY ON CUT RATES.

THE WHOLESALE LAUNDRY COMPARED WITH THE RETAIL LAUNDRY.—A REPLY TO "EXPERT."

(Written expressly for the National Laundry Journal.)

A certain writer upon laundry topics seems to be disposed to advocate very strongly a reduction in laundry rates. As near as I understand his argument it is something like this: The laundries, as a rule, now give large discounts. They would not do this if there were not a large margin of profit in the business, hence a considerable reduction in rates could be safely made. The advantages to be derived from such a course would be a large resultant amount of new business. I have no desire to misquote this gentleman, but I seem to get this out of his argument, and it is all I get. Granting that both his propositions are sound, it does not follow that his conclusions are wise, and as he brings forward no conclusive evidence we are at least warranted in disagreeing with him.

I have always looked upon the average laundryman as both a wholesaler and a retailer; his regular patrons are his retail buyers, his agents are his wholesale buyers. Combinations of this kind in other lines of trade are not uncommon. The large retailer gives less and less attention to any wholesale trade available, and the wholesaler is getting more and more in the habit of refusing all retail trade. The considerations which have brought about this condition are, we will find—if we are observant—operating in the laundry line.

It is perfectly rational to suppose that at no distant day we shall have wholesale laundries, establishments who do no retail business whatever; in fact, there are laundries which very closely approach that condition now. I know of one, for instance, that has no office or agency, does not own a team or employ a driver, and yet is doing the work of fifty teams. These teams are the retailers, the laundry is strictly wholesale, it does the work at the wholesale rate, and the retailer passes it out to the consumer.

The mistake is made in the attempt to combine the two—that is, to attempt both a wholesale and a retail business. The man whose tastes run in the wholesale line should confine himself to that line. Upon the other hand, the retailer will do well to give up the wholesale branch of his business, and devote himself exclusively to his retailing.

Now in wholesaling several things are evident. The wholesaler can sell laundry work at a lower scale of prices than the retailer; hence if we find him selling shirts at ten cents, less thirty per cent, we must not conclude that his margins are larger and that the retailer can do the same thing and still make money. Yet this is the position the writer to whom allusion has been made, seems to take. Now why can the wholesaler sell laundry work cheaper than the retailer? The reasons are so many that we cannot give them all, nor is it necessary. We will simply give one or two.

First, then, because the cost of production is less for the reason of greater magnitude of output. It is a well-known fact that in a growing, well-conducted laundry, increase in business is not followed in equal ratio by increase in expense; in other words, as business increases in gross the per cent of cost decreases. The item of rent, or percentage upon capital invested comes in here, because the wholesaler does not need what we might call an expensive location. Again, where the retailer has the needs of one hundred customers to attend to, the wholesaler has but one. He has less per cent cost of clerical help, less of teams, less of collection, and while his losses upon account may be larger in the aggregate, his percentage of loss is likely to be less than that of the retailer. We see then that the fact that laundries do give large discounts in the attempt to build up a wholesale business, does not prove that general laundry rates are too high and should be reduced.

Now let us look at this matter for a moment from the retailer's side. Here again we will avoid as much as possible petty details. Let us suppose a laundry doing a business of $50,000 per annum. Fully seventy-five per cent of this work must be collected and delivered at the houses of the patrons, and a large proportion of the business is upon the credit basis. The ruling price is ten cents for shirts and two cents each for collars. Now it so happens that no living man, so far as we ever heard of, knows the actual cost of laundering a shirt or collar. If we attempt to figure the cost we find ourselves very soon arriving at a point where we must indulge in estimates, and it is almost invariably the fact that we underestimate. To the cost of laundering we must add collection and delivery, office and bookkeeping, collection of accounts, cost of all supplies, per cent on investment, rental, wear and tear on plant, fuel, lights, water, and a hundred other things. Thus we see we are forced finally to base our figures upon the grand result, and even then there are many things the cost of which we are likely to underestimate. For instance, the wear and tear on plant.

But let us suppose that this laundry clears up $10,000 per annum. There may be $50,000 laundries doing better than this, but we doubt it, and we know several not doing as well. Now we ask: Considering the head work, worry, and all that sort of thing wrapped up in the management of a retail laundry, is $10,000 too great a compensation? And yet this advocate of price cutting wants to still further reduce the possible margin. To be sure he offers compensating advantages.

It is said, exceptions prove the rule. This writer evidently embraces this doctrine in its entirety, for, he argues, laundries do give large discounts and do make money, hence discounts should rule. It is very evident that no laundry, unless it may be the wholesale establishment, does all its work at the discount price, and if this is true it may be supposed that the profits, if there be any, comes from the work done at list prices, the cut-rate work adding but little, if any, to it; and it is possible that the cut-rate work might be increased to such an extent as to swallow up the profit entirely—a case of the lean kines swallowing the fat, as in Pharoah's dream.

Again, this writer argues as if all laundries were upon exactly the same basis as regards cost. Nothing could be further from the truth. For instance, there is no such thing as a fixed wage rate. My friend conducts a laundry in a city where the principal industries are of such a nature that there is little demand for female labor; with my city the reverse is true. His bookkeeper costs him $4.50 per week; I pay mine double that. He hasn't a girl in his laundry drawing over ten cents an hour; I have some getting double that.

There are other considerations along this same line. We all recall the grocer who announced for sale "strictly fresh eggs," "fresh eggs," and "eggs." Now there are a good many grades of laundry work, from strictly high grade down to just common work. The former cannot be produced at the same rate as the latter. The man in any section who is doing a poorer class of work than his competitors may be compelled to cut his price in order to get anything to do, but is it necessary for the others to tumble into the general ruin? We think not.

Now what are the compensations offered by this advocate to cut prices? Simply this: A large increase in business. This promise is based upon the assumption that there is in every community a large number of persons who can afford to patronize the laundries, but do not do so because they think laundry prices are too high. We think this assumption is very largely a figment of a vivid imagination. That there are a large number of persons yet outside the laundry fold is no doubt true, but that with a cut in price they would rush en masse to the laundries, is a doubtful conclusion, to say the least. We must remember that when we reduce our price twenty-five per cent we must have an increase in business of twenty-five per cent to place us in magnitude of output where we were before the reduction. I, for one, don't believe there is anything in these compensating advantages.

The price cutter may increase his business, but he will not do it from this laundryless class; his increase will come at the expense of his competitor. His competitor sees the point and meets the cut. Will some one with a head for figures sum up the gain? THEO.

"EXPERT" ATTACKS "THEO."

HE DISAGREES WITH SOME OF HIS THEORIES AND DOES NOT HESITATE TO SAY SO.

"You talk such nonsense," "Theo." said,
With just a shade of condescension.
Your pardon, "Theo," I but meant
To come within your comprehension.

An able controversialist writing over the nom-de-plume of "Theo." read the writer of this article a lesson, which has awakened a responsive chord and, craving the indulgence of the readers for again bringing the subject of cut rates into prominence, he thus respondeth:

To begin with, he assumes that I am "disposed to advocate very strongly a reduction in laundry rates;" his language implying a general reduction; whereas my contention was that in particular instances only, was a reduction in laundry rates justifiable, or desirable, there being plenty of room in most towns for both the high-priced and the low-priced laundry.

We all know of cases of coercion, or the boycott, in one form or another, has been resorted to for the purpose of compelling a laundryman to comply with the fiats of his competitors in business. In the birth and death rate of laundrymen's local associations during the last decade, we have most unmistakable evidence of how unwise, and ineffectual were the general application of restrictive laws in the matter of prices.

The coming successful association will have a constitution, rules and by-laws that are framed to advance the interests of all, without handicapping, or retarding individual effort toward advancement by every legitimate means. As it is at present laundrymen associated and in their corporate capacity, seem to forget—pardon the assertion—that as individuals they are competitors, and that price is a patent figure in trade competition.

In most cities of 20,000 population or over, there is a class of trade that would not patronize a low priced laundry any more than they patronize a low priced tailor or shoemaker; and there is a class of trade that would deal with a low priced laundry in preference to a high priced one.

A reduction in price is a sound principle in trading that may be applied successfully in particular cases; the proprietor being the best and only competent judge as to whether a reduction in rates will increase his business and profits, and benefit him individually or not.

The plea put forth by "Theo." that in the case of a laundryman reducing prices, his competitor would meet the cut and thus all would be losses in the end, may be dismissed as apocryphal. I could name a score of cities where there are cut rate laundries and no such dire calamity has been experienced, nor has "general ruin" as yet been heard of.

Instead of arguing as "Theo." says I did, that all laundries are on exactly the same basis as regards cost, I will go a little further than he does, and say, that the conditions under which laundries are operated differ to a considerable extent even in the same city or town. Management has much to do with the question of cost; one man can operate a cut rate laundry doing $200 per week and make money, while another, like the hero in "Theo.'s" yarn, doing $200 per week at standard prices, with the local association helping him out, goes headlong into bankruptcy.

He says: "It is very evident that no laundry, unless it be the wholesale establishment, does all its work at discount prices; if this be true, it may be supposed that the profits, if there be any, comes from the work done at list prices; the cut-rate agency work adding but little if any to it.".

What "Theo." designates as "wholesale rates," and which we will define as "any old rates," are working far greater havoc with laundry profits than retail rate cutting ever did, or is ever likely to.

A reduction in price generally results in an increase of trade, which lessens the cost of production, and this with good management, will, in most cases, go a long way towards counterbalancing any reduction made within the limits of reasonable profit. The man who cuts beyond these limits is spinning a rope to hang himself.

The manipulation of the wholesale, or agency work, through the various processes of marking, washing, ironing, sorting and bundling, entails as much expense as a like quantity of retail work would. In all wholesale and retail laundries the agency, and regular patron work, is handled exactly alike from start to finish. Handled together, the increased production reduces the cost of the whole; but does this justify the selling of one-half the product at cost?

Price is a potent factor in laundry competition, but it is not the only factor—there is quality, judicious advertising, facilities for collecting and delivering, and good management in the direction of all these, and the laundry that turns out perfect work only, can hold the bulk of its trade against any competition in prices by enlarging its sphere of operation, and an energetic out-of-door policy can gain trade enough to recoup for any loss of patronage.

Organization is the only remedy for the evils that have crept into the laundry business. Sociology tells us that like-mindedness is the basis of successful organization. Laundrymen have many interests in common; there are many ways in which they can unitedly work for the good of the whole, and even the matter of prices, which has been such a bone of contention, might be amicably settled.

If all the laundry proprietors in a state were members of an association, a scale of rates might be formulated for localities where such were considered desirable, in which prices would be retained as a factor in competition. It might also be agreed to exclude towns in which one or more members of the association operated a steam laundry from the field of agency operations. Then the laundry peddlar in the cities might be handled without gloves.

EXPERT.

"THEO." TO "EXPERT."

ONLY A DIFFERENCE OF OPINION AS TO WHICH IS RIGHT. MAY KEEP UP THE CONTROVERSY.

Argument between man and man usually arises from a difference in point of view. In the present instance "Expert," in so far as he makes an argument, does it from the outside, while "Theo." argues from the inside.

As the present discussion has served somewhat to obscure the original contention, I desire to get back to the starting point.

At first, "Expert" introduced an article upon "cut rates." In this article the lowering of prices seemed to be the panacea offered for all the evils to which the laundry industry is subject. Cut prices were not only given as a remedy, but as an infallible one, and the only one as well.

"Theo." very briefly replied to this article, arguing against the wisdom of "preaching cut rates." Then followed by "Expert" another article simply emphasizing the ground before taken; then followed from "Theo." a somewhat extended writing upon the subject of "Laundry Prices and Conditions." This article was not intended particularly as a reply to "Expert," but was rather a somewhat careful study of laundry conditions gathered from twenty years' inside experience. It is against this article the alleged attack of "Expert" is made.

Now if "Theo." made any argument at all, what was it? I think it may be epitomized as follows: While cut prices may increase business in some caces, and while a reduction from current rates may be made without entire loss of profit, such reduction is unwise and uncalled for, because the public are generally satisfied with laundry prices. What they demand is, not lower prices, but better service, and better work. The intelligent observer will recognize the room for improvement in both these particulars.

The past has shown that a reduction in prices leads to other reductions until demoralization is an accomplished fact, where profit can only be made by a lowering of the standard of quality. In this connection it should be remembered that laundries are not subject to market conditions which cause fluctuations in price both upward and downward; the conditions in the laundry remain much the same year in and year out; a change in the price of starch or other material does not greatly affect the cost of output, and while "labor saving" appliances are constantly being produced, statistics show that the percentages of cost in the average laundry is not reduced; in fact the tendency seems to be upward.

Recognizing existing conditions which make the giving of discounts legitimate and necessary, "Theo." proceeded to argue for the separation of "the wholesale" part of the business from the "retail," as is done in other lines of trade. While it may be true, as "Expert" says, that the methods of the wholesaler do not differ from those of the retailer, it is perfectly clear that the cost price will be less for various reasons, which were given.

The above being substantially the argument of "Theo," he is quite willing to leave the matter for a verdict with the intelligent laundrymen of the country.

Before dismissing the subject entirely, as "Expert" has honored me with an attempted criticism of my last article, I must in courtesy return the compliment.

At the start we find him an advocate of cut rates, and in his original utterances I fail to find him making any considerable exceptions. Where do we find him today? Is he an advocate of cut rates? Bless you, no. Cut rates are "justifiable and desirable" only in "particular instances," these instances being in towns where there is a "demand" for a "low priced laundry." "No one possessed of common sense" would reduce his rates if he is doing a good business.

Again, he talks about "association rates," a subject to which I did not allude, for I know of no such rates.

He goes on to say: "In most cities of 20,000 population there is a class of people who would not patronize a low priced laundry." Here he borrows my thunder, for this is exactly my contention; with equal truth he might have argued that there is a class who will not patronize any laundry. In other words, the laundry patron comes very largely from the better class, and the people who are clamoring for the cheap laundry are too few to be worthy of consideration. Think for a moment of lowering our standards to catch the rabble! Let the Chinese alone in their particular field.

"A reduction in price is a sound principle in trading," he says; so is a raising of price, but we are not selling flour, and are not greatly effected by market fluctuations. Our raw material is labor, and so long as the wage rate tends to raise, or remains practically stationary even, it is folly to talk of lowering the price standard.

"Expert" draws a vivid picture of a laundryman that is surrounded by "peddlers" who do work for less than his price, and asks if he would in such a case "be justified in reducing his price." It depends upon the ground of justification, but it is "dollars to doughnuts" the last stage of such a price cutter would be worse than the first. The Standard Oil Company has worked upon that principle from the start. It has, of course, met with considerable, though not complete success. This has been possible because of its enormous capital and resources, but I apprehend it will not be wise for the pictured laundryman to adopt Standard Oil methods. The better for him to keep right on "sawing wood," trying all the time to improve the quality of his work, and the value of his service.

Finally "Expert" says: "Price is a potent factor in laundry competition, but it is not the only factor." Could anything be more encouraging? In my mind's eye already I see "Expert" advancing toward the mercy seat; soon he will take his place among the regenerated and forget that he ever advocated such a foolish thing as price cutting.

"THEO."

HOW TO GET GOOD PRICES FOR HIGH GRADE WORK.

You need not expect success to follow, or any coniderable expenditure well invested in advertising high grade work unless you have the article.

The next step is to convince the public that you are turning out an unquestionably high grade of work, and it takes an untiring earnest effort to do this. As a first requisite you should be earnest about it; and show your earnest faith in everything you say and do, to that end. Don't expect the public to put great faith in what you say unless you say it in a manner that will carry the conviction that you have unbounded faith and belief in it yourself.

While endeavoring to draw trade for high grade work at commensurate prices, it is not necessary to dilate on the fact that the price is correspondingly high, still one need not fear to have the fact known; for the price to some minds is a measure of the quality of an article, and an extensive advertiser has made a great strike in advertising that "They cost a little more, but—," making a full stop and leaving the conclusion to the mind of the reader.

A further illustration of the conviction of merit in high prices, in the minds of the public, was given by an experience of one of the largest retail firms in the West; which made a bold move to sell any make of a certain line of goods at an unusually low price, and advertised the sale extensively.

So bold was this move that they advertised to continue the sale through the entire season; but had reckoned without their host. Large contracts had been made with manufacturers for the supply, but one of the manufacturing firms fought the matter after learning what was about to go on; with the result that the advertising had to be changed to read "any make except Blank and Dashs', which make will be sold by us, but only at the regular price.

The result was, that the demand was such for this make of goods that it surprised the advertiser, and in fact all concerned; he had contracted for a large quantity and feared that at the comparative higher rate, he would be unable to dispose of them, but they went sooner than expected and the orders had to be repeated time and again before the season was over.

One of the chief causes for this effect was, that the goods had merit. Be sure that your work is of a high grade, and don't fear but what you will find people who are willing to pay what it's worth.

GOOD PRICES.

AND WHAT THEY MEAN TO EVERYONE.

When buying a hat and shown three of the same style, one at $1.50, one at $3, and one at $4, which would the average man consider the best?

When traveling, and approaching a city which you had never visited, and having no further information concerning the hotels than their prices, would you not be governed by the price as to which one was most likely to suit you?

We are aware that the price does not always indicate a corresponding grade in an article, but they do, as a rule, and the man of ordinary judgment follows rules rather than exceptions. Because a man who could scarcely write his own name became a millionaire bank president, one would hardly be justified in avoiding an education for his son in order to have him fill such a position.

Now, establishing that prices, as a rule, indicate merit and value, that high prices point to high grades, and that the majority follow rules rather than exceptions, it follows that people who want the best will determine that the highest price is most likely to be what they want.

That this applies to laundry work needs no special argument; in fact, it should need no argument at all—

it has been demonstrated in many large, and in some smaller cities.

There are people in every city who want the best and are willing to pay for it; though they are fewer in smaller cities their proportion is about the same, and their numbers can readily be added to by proper effort.

A very important reason why the best trade is likely to be drawn to a high-priced laundry is, that they are likely to avoid contact with an undesirable or objectionable class of people, and avoid the contact of their goods with those of such a class. There may be reasons why one should feel reconciled to ride in the same public conveyance with undesirable people, but there certainly are strong reasons why some should object to having their wearing apparel promiscuously intermingled with that of some others.

When a laundry is plainly, fearlessly and forcefully put before the public as a high-priced and high-grade concern, and turns out work commensurate with such a position, it need have no fear but what it will have business bid for, and in addition increase that class of trade.

GRADED LAUNDRIES.

WITH PRICES TO CORRESPOND.

The future will certainly show that laundries will be graded or classed, more or less, owing to the size of the city, as poor, fair, good, better, and best, and their prices will be regulated accordingly. It is our opinion that those sincerely interested in the welfare of the trade may as well consider that this only awaits a question of time to become a matter of fact.

There is good reason why the proprietors of laundries of different grades should still find great benefit in association, as well as matters in which they can find mutual interest, and on which they can act concertedly, with equal profit to all.

Among the many trade associations there are none perhaps on a firmer foundation than the Hotel Men's Association, and yet its membership embraces those whose prices differ very materially; and why should this not be so?

The manager of the two dollar a day house is as deeply interested in defeating the bogus check man, or any other of the deadbeats that occasionally impose on their fraternity, as the keeper of the five dollar a day house. And it is the same with the laundryman.

We cannot say exactly how long the Hotel Men's Association has been in existence, but it is many years, and during that time it has enrolled a very large membership, covering a wide range of territory, and established a death benefit fund that is highly satisfactory. Yet we believe that the matter of prices has not been one of the objects of formation or consideration.

A GOOD POLICY.

FOR LOCAL LAUNDRY ASSOCIATIONS.

(Extracts from remarks of F. P. Bendell at Cleveland, (O.), Banquet.)

Of course, you are all aware, the presiding officers cannot alone make a success of any organization. To be successful, the combined efforts of the entire membership must be enlisted, and if such encouragement be given the officers, success is sure to follow.

As time changes, so also do conditions. In the past, it has been the custom in organizations such as ours, to lay down a system of rules, which were binding by fines and threatened expulsion, or possibly both, if violated. The conditions as I see them today will no longer admit of such methods. Experience has shown that notwithstanding the fact that signatures of an entire membership were affixed to such compacts, they were broken and violated, in several instances, thus causing a breach between individual members, and eventually a loss to the Exchange, of members who had signed these compacts in good faith, and thus damaging the cause of successful organization.

Realizing these facts, I would recommend a revision of our constitution and by-laws, and an alteration of our rules, to as simple a form as possible, leaving out everything which will tend to interfere with individual rights, or which will lay us liable to censure.

As a substitute for such ironclad regulations, I would place our members upon their honor, or the Golden Rule, "Do unto others as you would have others do unto you." If one joins this Exchange and has its interests at heart as well as his own, he will wait long, and weigh well his acts, before inflicting an injury to his associate competitor, knowing full well that such injury may possibly react upon himself.

I would recommend, therefore, that we do away, too, with everything which could not be treated by every member of this Exchange both conscientiously and with respect. I would advocate largely a policy along educational lines being pursued. A great deal can be accomplished in this way, together with a social and friendly interchange of ideas and methods.

In the essays and addresses which will be given to you this evening by their several very able authors, you will get an idea of the educational policy I would recommend to be adopted. That we have not utilized our time to better advantage in the past is a matter of sincere regret. That we have in our Exchange the talent and ability to bring out essays and subjects for discussion relative to our business, there is no dispute. Let us then devote our time in some such beneficial manner, and we will, I am sure, be fully reimbursed for the time and thought thus invested.

If this plan or policy be pursued with sufficient interest, it cannot help but be conducive to a vast amount of good, and will be a source of useful, as well as practical knowledge to us all. Add to this the interesting social features, and we will unquestionably favor all, thus tending to bring out full, strong and interesting meetings. I would request here that the encouragement of the entire membership be given in support of this educational policy, for a fair trial at least.

That the aim of all engaged in our industry is, or should be, for profit, and not for glory, is sufficient reason for the existence and maintainance of such an organization as ours. I will not undertake to enumerate the many evils and obstructions at present in the way of successfully carrying out a business-like and harmonious policy in our Exchange, though there is no denying the fact that an undercurrent of dissatisfaction exists in our industry at the present time; but by applying true business principles to these questions, backed by a strong Exchange in which entire confidence exists, many such evils can be corrected, or obliterated entirely, to the mutual benefit and profit of all concerned.

To the ex-members and resident laundrymen who are not yet members of our Exchange I have to say, that on behalf of our membership, I extend to you a hearty welcome here tonight, and I trust that your impression of your fellow laundrymen and competitor may be advanced to the point of tolerance, or further still perhaps, to that of good fellowship and association.

To those who have recently embarked in the laundry business I would say, (and my associates will bear me out in my assertions), that had it not been for the successful past of the old Cleveland Laundrymen's Association, and the fairly present prosperous conditions of the Cleveland Laundrymen's Exchange, and the gallant manner in which these gentlemen held together through the many trials and hardships, fighting against all attempts to tear down the business principles of our industry and organizations, you would have sought other fields for the investment of your capital than the laundry business.

For had such methods as those which are gradually creeping into our industry, and which are being employed today, been introduced in the past, and had these gentlemen accepted this situation as final, meeting such competition, the result would have been that the laundry industry in our city would not be as tempting for investment as it now is, or rather as it was until recently.

Such being the case, your patronage and support should be given to help maintain the point already reached, and to further elevate our industry to the highest standard obtainable. I trust, therefore, that the impressions gained by you this evening will so influence you that your names will be handed to our worthy secretary to be enrolled as one of us, thereby lending your aid, influence, and hearty co-operation to the support of our organization.

Personally, I have at all times looked upon our Exchange as second only to my business; for, in my estimation, upon the success of the Exchange depends largely the success of my business, and eventually, that of my personal interests. If every one engaged, and whose capital, time and labor is invested in our industry, would look upon organization in this same light, satisfactory and profitable results would surely be the reward.

Before concluding my remarks, I wish to impress upon our members one important fact. That is, the great necessity of regular and prompt attendance at our meetings. By calling meetings to order at a designated time, it enables us to get through with the business on hand at a seasonable hour, thus making possible an early adjournment, leaving it optional to then take up the social features if any so desire. Some of our members in the past refrained from attending meetings solely on account of retarding business to a late hour. I trust that the members will look upon this point as one of absolute necessity for the welfare and promotion of our organization.

And now, gentlemen, in conclusion, I have endeavored to outline my policy in a comprehensive manner, and trust that you have grasped the ideas which I wished to convey. I appreciate the honor you have conferred in selecting me as your presiding officer for the ensuing year, and hope that I may merit your hearty support to promote our common cause.

ESSAY—ASSOCIATION AND ORGANIZATION.

(By Wm. Q. Lloyd of Williamsport, Pa., at Convention of L. N. A., at Cincinnati, Ohio., September, 1898.)

Coming events, in the history of the twentieth century, have cast their shadows before us, and we see written in unmistakable language our future history. Our war with Spain has demonstrated, not only to the Spanish people, but to the world, that we are a great nation. Individually we are keen of perception and quick to act; collectively, a mighty power. As organizers and promoters we have no peers.

Some fifteen years ago, by one or more individuals, there was conceived the idea of organizing the Laundrymen's National Association. One questions whether we realize the great advantages there have been derived. Association and Organization are the two connecting links that today bind together the trade and commerce of the world.

Organization has also stimulated the energies and awakened the ingenuities of the manufacturer, who in turn has given the laundryman machinery capable of doing vast quantities of work of a quality far superior to that done by the old-fashioned methods. It has moved the laundry from the basement, kitchen and back yard, to more commodious quarters—yes, right out on the street, side by side with the banker and merchant prince. The business is classed as a factor that regulates the eternal fitness of our very existence.

In this day of push and hustle what do we individually and alone amount to? We bear about the same relation to our organized body as one single cog in the wheel of the washer bears to the entire wheel. Were we the only cog in the wheel, even though without flaw or blemish, we would count for naught; on the other hand, if all other cogs were intact we are indispensable (pardon the crude comparison); collectively we are a success; singly a nonentity.

There is another side to Association. I would refer to the social side, where the hand of good fellowship is extended, when we meet as a homogeneous people to talk "Theory," "Practice" and "Result." The benefits derived, gentlemen, from the friendly relations existing are far better than we, without due consideration, are willing to concede. In the past this side of the laundryman's life was somewhat different; the laundry was looked upon as a shop filled with secrets where no one was welcome and none dare enter. Let us see what Association has done for us in this channel. If a laundryman today has occasion to absent himself from home, either on business or pleasure, on reaching a strange city he brings up at a laundry, and this is something like the reception he gets: "Hello! why, darn your buttons, but I am glad to see you; here, Clem, take this grip, and Mary, you telephone the house I will not be home for dinner, and when I do come I'll have some one with me. Say, Old Nibs, you look as if you wanted to smoke, so we'll just go out and take one." I venture the assertion that any member of this Association can travel from Maine to California and live on the hospitalities of his brother laundrymen and live well.

Association and Organization have so many advantages over individual effort that it would be hard to enumerate them. The concentrated thought and energies exerted in a particular direction carry a weight of prestige that one singly can never hope to possess.

What has brought about this change, do you ask? Association and Organization undoubtedly. Were it not for taking up valuable time, I might cite a number of instances where the L. N. A. has not only held together the tottering walls of bankruptcy, but placed on a firm footing, men in the trade, who are today doing a large and prosperous business.

The writer has been asked time and again, when making a friendly call on his fellow craftsmen, "Well, how is the L. N. A. coming on?" The answer invariably is, "Splendidly." Well, why don't you fellows stop that man Jones from doing up collars for one cent and shirts for five cents and giving a chromo with every package?" It is then necessary to explain that the L. N. A. has no legal right to kill fools (I wish it had), but that such asses die a natural death, or given plenty of rope, hang themselves, figuratively speaking.

Let me say, gentlemen, the advantages of Association and Organization are incalculable. The mere fact that it is the means of keeping in touch with the trade and leading men in the laundry world, is worth more to us in our individual business than the slight pecuniary cost of attending these meetings, and I firmly believe that the salvation of our business, as laundrymen, lies in the influential protecting power of the Laundrymen's Association. It is the godmother who will furnish succor to the weak and courage to the strong, and after the feast of good things, which are in store for us at this meeting, we will go home feeling that we have been benefitted both physically and mentally, and that we have been endowed with new life and energy which will carry us on successfully to the end.

STATE ASSOCIATIONS.

(Essay by T. L. Metcalfe of Hopkinsville, Ky., at Convention of L. N. A., St. Louis., Mo., October, 1899.)

Mr. President and Gentlemen: I am a firm believer in associations; and why not? Was it not God himself who placed man in the Garden of Eden and created woman that she might be a fit associate for him? That was, as far as I know the first stated association. Laundry, in that primeval day, being confined to simple garments of fig leaves, it is not likely that co-operative measures for mutual protection in laundry interests were discussed.

If the local laundryman in each town could be convinced that each brother laundryman is a friend and not a foe, and that it would be to their mutual benefit to meet together in an association, at stated times, the greatest barrier to local and state organizations would be removed. Each looks upon the other through smoked glass, as it were, until they meet in local or state associations, and then they see their brother laundrymen as they are, grasp friendly hands and tell each other their troubles and how to overcome them. Then it is that these false ideas we have had of each other are dissolved in the good fellowship of social intercourse and the spirit of mutual aid.

Much has been said concerning inter-state associations. I, for one, believe the time is not yet ripe for such associations; for instance, take my own state, where not one-third of the laundrymen affiliate with the state association; would it not be better to develop the material at hand and interest each and every laundryman as near as possible in your own state before inviting him to visit other states and associations? If you cannot interest your fellow craftsman enough to meet with you in your own state you certainly cannot expect him to visit another state to meet you.

I do not wish to be misunderstood in this matter, for I am not in the least opposed to inter-state associations. On the other hand, I am heartily in favor of them when the time is ripe for them. But while there is so much material in each state undeveloped and belonging to neither local nor state associations, much less national, I believe it would be a far better plan for the laundrymen of their respective states to go to work on their brother laundrymen who are not in an association.

I cannot as yet recall a meeting where an inter-state association has been held where even half of the state association members from any one state were present, and why this non-attendance of our state organization members? I think we can put most of the reason in three words—expense, time and results.

In most cases the expense of attending a tri-state association is greater than is required for a laundryman to attend an association held in his own state, and the time consumed in going and returning is something that the average laundryman looks upon with equally as much concern as the expense, as a small laundryman usually thinks that the gears of his machinery will slip a cog if he is not there.

We must hang together or we must hang separately, as far as doing any good in association work is concerned.

For there is little to be accomplished when there are sixty to seventy-five laundries in a state that should be represented, and only fifteen to twenty representatives are to be found in attendance at a state association, nearly half of whom are from the metropolis of the state.

The president: You have heard Mr. Metcalf's excellent paper. Are there any remarks?

Mr. Burgess: We in Massachusetts have no state organization, and I would like very much to hear from some of the presidents of state associations, and to learn what they are accomplishing, and what is the best way to proceed to organize a state association.

Mr. Simmons: I have had some experience in the organization of a state association. We had the good luck of organizing the Illinois Association in Peoria some five years ago; and it has done fairly well. We have worked in many lines in the endeavor to arouse enthusiasm and we are still striving. Our association started out with a great bursting of bombs, and I suspect that was our trouble. Something like the merchant who opened up with a brass band and was closed by the sheriff. (Laughter.) The social feature is very good if it is not carried to the extreme. It is well for the laundrymen of the state and the United States to get together and talk over their little troubles. It is generally true, where a laundryman has a strong competitor in some other part of his state, he is likely to think of that competitor as a first-class—well, a mean man, who will not stop at anything to get business, and he doesn't care much to make his acquaintance, or to shake hands with him. He doesn't know whether he can trust him. But they meet, they become acquainted, and the suspected Mr. Brown is found to be a gentleman, and one says: "I don't know but I am as much to blame as Mr. Brown."

Mr. Lyon: Mr. President and Gentlemen of the Convention: I wish to state that we have an association in Kentucky. We are sticking together, and we hope to pull through and do some good.

Mr. McKeen, of Terre Haute, Ind.: Mr. President: Brother Simmons and Brother Lyon have covered the ground pretty thoroughly. I think that sociability is the line to work on; that as men become acquainted and are friends the more honorable will be their business dealings.

UNFRIENDLY COMPETITORS.

AN ACTUAL OCCURRENCE THAT HAPPENED TO THREE MEN IN THE SAME BUSINESS.

A constant bickering and quarrelling with one's competitor in the laundry business will never benefit any one. The sensible man will always try to retain the friendship of even a competitor, as there is no knowing when he may be compelled to ask assistance.

A short time ago we heard of a case in point, where, if there had been a closer friendship existing between the three men engaged in the laundry business in a nearby town, it would have saved the business of one at least from being completely wrecked. In the town were three good plants. One night one of these plants was destroyed by fire, and the next day one of the others had the misfortune to badly damage the engine. It was on Monday night the laundry burned, and on Tuesday when the breakdown occurred. All the work gathered in the destroyed plant on Monday was burned, and that in the other was brought to a standstill, as there were no facilities to go ahead with the work in hand.

Both laundrymen were in serious trouble. The one whose plant was destroyed had but little insurance, not enough to cover his loss on machinery. The other could not positively get the work out, as it required several days to repair the engine. Both these laundrymen had been at sword's points with each other as well as the third man who had escaped a catastrophe, consequently they could not ask assistance of each other.

Laundryman No. 3, knowing the position in which the others were placed, took advantage of it and at once began soliciting their trade. As a result the citizens sent what work they desired done that week to No. 3. His capacity was large enough to do it by working overtime. He hired all the help from the other plants that he could possibly use and succeeded in getting his week's work out on time.

Laundryman No. 1 could do nothing but wait for the insurance underwriters to examine and appraise his loss. No. 2 had his machinery in operation the last day of the week, but he was unable to get his work out. No. 1 settled for fifty cents on the dollar with the insurance company. He had only a few outstanding accounts, and some were collected, but not all. His credit with the machinery and supply houses had never been the best, and he was indebted to one or two firms. The money he received for insurance was not enough to liquidate all his indebtedness in town, and as a result ruin stared him in the face. It was then he recognized the folly of harboring an enmity toward a competitor, but it was too late, and he departed from the place a sadder but wiser man.

No. 2 found the following week that he had lost ground. The work done at laundry No. 3 was so highly satisfactory to those who had to patronize it that they decided to remain, and as a result he found himself in serious straights. It was then he decided to make a friendly advance toward the enemy's camp, and with a flag of truce in hand he one morning approached No. 3's stronghold. No. 3 received him graciously, and after a long talk they came to the conclusion that as No. 1 had departed there was about enough business remaining to support two plants. They shook hands, buried the hatchet and agreed not to disagree in the future, but pull together.

This was but a short time ago, but up to the present both these laundrymen are reported as being on the most friendly terms and holding their own. If in the first place all three had been on intimate terms, No. 1 could have secured all the assistance he desired, as well as No. 2 from No. 3, and though No. 1 might have been forced to the same wall he ultimately was, he would have departed knowing the others were his friends.

This is only one of many similar instances that we hear of, but it has its moral, and that is, to always secure and keep the constant respect and friendship of a competitor.

BROUGHT THEM TO TERMS.

THE MILWAUKEE LAUNDRYMEN PUT A STOP TO ANOTHER INROAD ON THEIR BUSINESS—THIS SHOWS WHAT THEIR ORGANIZATION CAN DO.

Editor National Laundry Journal:

I wish to relate a little incident that occurred in Milwaukee, and which will show what a body of men, who are bound together for mutual protection, as well as social pleasures, can do when they are put to a test.

One day in the latter part of December, I was called up by 'phone by a certain large gents' furnishing goods store, and asked to call on them at my earliest convenience. I was not long getting on a car, and soon landed at their place of business. I was ushered in their private office and introduced to the manager. He at once began his explanation for calling me down town, as follows: The firm had been considering the value of some good advertising, and proposed to carry it out on the same lines some others in the same business had been doing for a time, in other cities. It was this: They proposed entering into the laundry business at cut rates, and he made me a proposition to do the work at these prices: Shirts, 5 cents; shirts by hand, 8 cents; collars, 1 cent; cuffs per pair, 2 cents; drawers, 4 cents; under shirts, 4 cents; socks, 2 cents; handkerchiefs, 1 cent; bar coats, 8 cents; aprons, 3 cents; ladies' waists, 10 cents and up.

It was to be a solid cash transaction, and would tempt a great many in the business.

Immediately on leaving the "tempter," I 'phoned the secretary of our association, and he in turn notified the president, and in an hour we three were in close consultation over the matter. The result of our conference was to call a special meeting of the association, and also extend an invitation to laundrymen not members, to meet with us. This meeting was held on the 5th inst. I stated the case in a nutshell, and it brought out a long and decided discussion. A motion was made that every man present pledge himself not to take the work of this house at anything but regular prices. This was carried unanimously. Those present also agreed to put the matter before the men who were absent, and get from them the same pledge.

The president appointed a committee of ten of the leading men in the business to confer with these furnishing goods dealers, and explain the injustice of the proposition, and labor with them to drop the matter entirely. They met by appointment, and had a long and very interesting conference. It was, I am glad to state, fruitful of good results. The gentlemen at once saw the injustice of the thing, and agreed to drop the matter. They stated it had never occurred to them in the light the laundrymen put it, and recognized the fact that they would by carrying out the plan antagonize their interests instead of benefiting them. They had visited several other cities, and found the same thing was being done at a profit, they had decided to go ahead, if they had to set up or purchase a whole plant to do the work, but now they would give it up entirely and try to "live and let live." This firm stands ace high now with the laundrymen of Milwaukee.

This little matter shows the actual value of an association. Stick together, and in the long run it will pay us more than we imagine. Very truly yours,

C. G. Comstock.

ASSOCIATION BENEFITS.

IN EMPLOYER'S LIABILITY AND FIRE INSURANCE RATES AND LAW EXPENSE.

(Written expressly for the National Laundry Journal.)

Some of the advantages offered by British laundry societies to their members may be enumerated, as for instance: A reduced rate of premium from insurance companies, including insurance against liability of employers for accidents to employes. A benevolent fund, the object of which is to help members in distress, caused by fire, accident or illness of the member or his family. Free legal aid; debt collecting; labor bureau; experienced advice on all matters affecting laundry management and requisites; patents, etc.

Circumstances alter cases and it might not be advisable for American laundrymen to attempt to follow out the aims and objects of our British brethren, as set forth in their articles of association. These are, however, ample grounds for organized effort along similar lines by the trade in America.

ONE OF THE STRONG FEATURES.

One of the strong features of British laundry organization, and one that has been sadly lacking in American efforts in that direction, has been legal stamina. The National Trade Protective Associations of Great Britain numbers among their executive officers a qualified lawyer, who holds the joint offices of solicitor and secretary; an example which might be copied to advantage by our home societies. Upon such an official would devolve the drawing up of contracts between members and their agents, drivers, employes, etc.; the collection of debts; the settlement of disputed or exorbitant claims for compensation. Prosecutions for breach of contract; failure to account, etc., and the advising of the other officials of the society in the conduct of business connected therewith.

THE BRANCH SOCIETIES.

The branch society is another feature of organized effort in England that might greatly promote an interest in organization amongst laundry proprietors in this country, and I would suggest the propagation by the Laundrymen's National Association, of branch societies on a plan that would include the entire country.

OBLITERATING STATE LINES.

Instead, for instance, of having an Ohio State Association, let state lines be oblierated and the country apportioned into districts. Cincinnati branch, for example, might include all the laundries within a radius of twenty-five miles, the territory covered taking in parts of Ohio, Indiana and Kentucky. Only in exceptional cases should a laundryman be required to travel over fifty miles to headquarters. The proximity of the meeting place would thus make it convenient for the members to meet frequently, say quarterly, for the transaction of business, social and educational intercourse.

PROTECTION OF EMPLOYES.

Many laundrymen in the past have voluntarily paid compensation to employes for injuries for which they were in no way liable. United effort on the part of employers could doubtless secure a rate of premium for the insurance of their work people against accidents, which rate would fall but lightly on the individual, while securing him against the payment of large sums, or the defending of law suits and other inconveniences.

British steam laundry proprietors have been compelled by legislative action in favor of employes in the form of employers' liability, and workmen's compensation acts, to protect themselves and provide temporary or permanent relief for work people who may be the victims of accidents, while in their employment, by placing all such risks with the insurance companies.

Employers of labor in Germany are by law assessed in proportion to amount of wages paid by them to cover the expenses of employes' accident insurance.

It would be not only a graceful act, but thoroughly in keeping with the spirit of our glorious constitution, were the American laundryman of his own accord to adopt a policy of protection for his employes against accident, and would be none the less graceful should the employe be called upon to pay a percentage of the cost.

FIRE INSURANCE REDUCTION.

A reduction in the present high rates of insurance against loss by fire would probably follow a strong representation of the laundryman's side of the question if it was backed up by the organized laundry trade of the country.

Express rates on agency work might be modified considerably if the matter was laid before the various companies in proper form emanating from a national organization of tradesmen, representing five or six thousand steam laundries.

The fraudulent agent, or driver, would not parley with, or dodge, a duly authorized practitioner at law as he does the laundryman, nor would the latter hesitate to employ the services of the association solicitor, knowing just exactly what it would cost him for collection or prosecution.

PRICES AND COMMISSIONS.

Prices and commissions might also be regulated to a certain extent by organized effort which would apply the principle of home rule, leaving the branch society to decide whether a fixed or graded scale of charges, and discounts, should prevail in the territory under control.

LOOKING BACKWARD.

An old-time laundryman, who was one of the charter members of the L. N. A., in a recent letter to the editor of the JOURNAL, writes:

"Gordon and I remain of those who took that memorable trip to the Boston Road House, when the first convention in the Hub was held. We may be the next to be called from our busy work.

"We are all sitting in the twilight and watching life's sinking sun, so let your door be on the latch, for in the night before the morning death may come.

"Shute, Reed, Mabbett, Crawford and Owens have all passed away; who will be the next. There are not many more of the scarred, battered and withered leaves to answer roll call.

"Do you gather in a moral or two?

"It is the inevitable. It is as sure as the attraction of the magnet and the steel.

"Poor Crawford died broken-hearted, lost his nerve, faltered, stopped to think, looked backward, sank down into the open earth and we lost as generous, as true, as kind a soul as ever lived."

* * * *

How many members of the Laundrymen's National Association have attended every meeting? Mr. Chas. Dowst, of the *National Laundry Journal,* appears to be the only one who can positively trace a record of being present at every meeting and every session. If there are others we would like to know, for it would seem some familiar name had slipped us in the investigation. We would also like to know the names of those who have attended all but one meeting. So far we can find but three, viz.: Former President Alfred B. Richards, of Philadelphia; E. V. Hohnstamm, of New York, and Adrian Otte, of Grand Rapids, Mich.

HOW TO SELECT A LOCATION.

The question of what size a town ought to be to support a laundry is often asked. An industrial place of two thousand inhabitants, composed largely of young unmarried men, who have constant employment, and a prosperous business community that generally accompanies the foregoing condition, will sometimes furnish more business for a laundry than a city of five thousand under other conditions.

A town of the size first mentioned, which is so situated in relation to surrounding towns that it has several smaller ones tributary to it, and more conveniently so than to any other point, is likely to furnish access to more laundry work than a city of five thousand that is placed oppositely in those respects.

As to the part of a city in which to locate we would say: that portion from which the most of the class of work intended to be catered for needs to be first considered; and the location selected, which, while it need not, and probably ought not to be far away from the business center, should be in that direction from said center, but just how far would depend on the conditions prevailing in each individual case.

For instance, if one sees an opening for a laundry to do first-class bundle work in a large city, the laundry might be located some distance from the very heart of the business center, if it is in the direction where the people who are most likely to furnish this class of work, live; and it will be more convenient for the collection and delivering of the work; but it should not be so far away from the business center as to make it inconvenient for patrons to call during business hours, or on their way to or from business, to pay a little bill, for instance, or give instructions, look up a lost article, or any such little errand as they occasionally will have with you.

The questions of water, gas and sewer connections are very important to consider before investing in any real estate, or renting a property, as cases have been known where parties were obliged to carry mains for all three, water, sewer, and gas, some distance.

Water, its chemical composition, and fitness for laundry purposes, is one, if not the most important of the matters to be considered and should be taken up before anything else, after deciding the matter of climate and city. Its nature may be such that you cannot compete successfully with those you may meet who are working under more favorable conditions in that respect.

A TIMELY WARNING—ANOTHER VICTIM.

HE SELECTED HIS LOCATION FIRST AND DISCOVERED HIS ERROR LATER.

We have time and again warned the trade to use caution when selecting a location for the laundry business to be sure that there is water to be had that is such as will be advisable and advantageous to use for the purposes of laundry work and for steam making. Nevertheless there are occasionally to be found those who are either new in the business or in the past have not considered the importance of carefully reading their trade journal, as will be shown below. One may, after geeting settled and well started in the work, find himself contending with a water from the hardness of which there seems to be no practical escape.

Editor National Laundry Journal:

I enclose you analysis of the water here to see if you can make any suggestions that I have not already tried. I came here to start a laundry but have encountered serious difficulties in the water. I have tried everything suggested by my experience of nine years in twenty-eight states, but of no avail. So far I have found it impossible to rinse in the water, the clothes come out spotted and the blue parts immediately turn yellow upon being ironed. My well is 1,857 feet deep and the water analysis is as follows:

	Grs. per Gal.
Silica	.613
Oxide of iron and aluminum	.245
Carbonate of lime	8.702
Carbonate of magnesia	5.043
Sodium of potassium sulphate	7.503
Sodium of potassium carbonate	.302
Sodium of potassium chlorides	47.600

It contains a trifle over 80 grains of solid matter per wine gallon.

Now, if you can make any suggestion at all please answer by return mail, as I am using every effort to give the people good work. Yours truly, H.

* * *

The inquirer is certainly unfortunate in the composition of the water, and we see no practical help for him. He may better matters slightly by using his blue as lightly as practical, and also by saving every particle of condensed water that he can; but beyond that we would advise him to go to no expense whatever in trying to improve this water for his use.

It is practically impossible to remove the sodium of potassium sulphate and sodium of potassium chlorides, of both of which there are 55.103 grain to the gallon; an excessive amount; making a very hard water. This element of hardness is detrimental to good washing, but not so detrimental in steam making, as it is not such as forms a stubborn scale in steam boilers; therefore we advise using all condensed water for rinsing, in preference to returning it to and for the benefit of the boiler.

By saying that it is practically impossible to soften this water we mean that it is so, from a standpoint of profit. It can be done by condensing and by chemical treatment, but the expense would be beyond all reason for profitable laundry use.

LAUNDRY EQUIPMENT.

A FEW VALUABLE HINTS ON THE SUBJECT OF GOOD MACHINERY AS WELL AS GOOD WORK.

(Written expressly for the National Laundry Journal.)

Having observed in your correspondence columns several critical notices and enquiries in regard to suggestions, etc., advanced by me, for facilitating and improving methods, I will begin by replying to a few.

First, the measure and temperature of water used in washing. Guess work is too much in vogue in our wash rooms; too much dependence is placed on the washman's sense of sight and touch. Science has provided the laundryman with the means for determining quantities and temperatures, but few have made use of them in that part of the work fundamental to all the other processes, and therefore the most important. Go into one of the large laundries, and there the dry room, the mangle and ironing machines, will be found with thermometer and gauges attached, that keep operators and attendants posted as to heat and steam pressure, and the variations in either; while in the same laundry the washing machine is run on the guess work system.

The old and ordinary method of guessing at the quantity of water in the machine, and then accurately measuring the quantity of blue to be used in producing a particular shade, accounts for the many different tints—beautiful and otherwise—obtained in one day, or one week, by depending on the eye and good judgment of the washman; while clothes are boiled when they should not be, and only warmed when they should be scalded; all because we do not make use of the means at our disposal for ascertaining the temperature and quality of water we are washing with.

EQUIPMENT.

The ideal steam laundry, whether large or small, should be fitted up to combat successfully with the competition of all rivals for trade in its legitimate sphere. The wash room should have every facility for turning out clean, clear, white work. The starch room should be equipped for starching by the latest and most approved methods. The ironing room supplied with a full line of ironing machines with all the recent improvements; the office be neatly furnished, and supplied with a set of books necessary for laundry bookkeeping; while for collecting and delivering, a neat, attractive wagon, with horse and harness to match, that will elicit remark from prospective customers, is the proper thing. To have a completely equipped laundry should be the aim of every one in the business.

A building constructed especially to meet the requirements of the business is at all times desirable. The essentials in this respect, being plenty of light, adequate floor space, free ventilation and perfect drainage; not one of these four requirements can be dispensed with, except at the cost of inferior work, or an increased expense for labor.

WATER.

Only now and then is a supply of water suitable in every respect for laundry purposes to be had by drilling, and this method of obtaining a good supply of water should only be tried after an authority on the subject has been consulted. The ideal water supply for a laundry is a well on the premises, or a private supply from an adjacent lake, second to which is a supply from the city water works, river or creek. In the former case the water will probably be uniformly pure all the year round, while in the latter the quality may be as variable as the weather.

Where pure water is not to be had filtration is resorted to, and there are so many good filters on the market that no laundry need be without a supply of water which can be utilized for any part of the work in a steam laundry. A filter of large capacity should be used and ample storage provided, not less than a two days' supply being requisite to obtain the best results, by allowing twenty-four hours for settling after filtration. If the water is drawn directly from a creek or river it should be forced into an elevated tank, say, thirty feet above the level of the wash room floor, and from there drawn through a filter into storage tanks placed at an elevation of several feet above washing machines.

POWER.

There are laundries using electricity as a motive power, and for heating irons, but at no pecuniary advantage, as it is necessary to have a means of generating steam for drying, mangling, cooking and heating water. There are men living who have seen a great many innovations, and there are men living who will see a great many more. The electric laundry may be one of them. In the meantime steam is the best known and most favored agent for supplying power and heat for steam laundry purposes.

An engine of 10-horse power, and boiler 15 horse power or more, will drive machinery, and generate steam enough for heating and drying in a laundry equipped for doing a trade of two hundred dollars per week of five working days, without the necessity of resorting to hard firing, forced draught, or other expedients necessary where the engine or boiler, or the latter alone, is inadequate to the requirements.

The writer's choice in the selection of a steam plant would be, a horizontal engine and boiler; the latter of the return flue type and stationary, or if portable covered with a non-conducting padding. A considerable saving in fuel is effected, and an increased head of steam can be kept up and held steadily with much less labor in firing, where the boiler, whether horizontal or upright, is well coated to a thickness of two inches or more, thus preventing the escape of heat through the boiler plates, and preventing the cool atmosphere from coming in contact with the outside of the boiler.

A boiler that is not provided with hand holes through which every part of the plates exposed to the fire can be got at for examination and cleaning off should be discarded, for sooner, or later it is going to cause trouble, and very often this happens sooner, rather than later.

Sometimes it happens that power can be rented to the mutual advantage of the parties concerned, and where a laundry proprietor rents power or steam from outside parties, provision should be made for a steam supply of sixty pounds pressure for drying, heating and other uses. A lower pressure might give the required power, but would retard the drying and heating processes.

The engine room should be equipped with a set of tools, which need neither be elaborate nor expensive, but will be found very useful at times.

MACHINERY.

The shafting should not be less than 1 11-16 of an inch in diameter. Wooden split pulleys will be found the most suitable, and a good quality of leather belting should be used.

In making a selection of machinery, choose the best, which will be the latest, and have every recent improvement for turning out good work at the minimum cost for labor and supplies. During the last year or two, quite a number of improvements have been made in laundry machinery, and the laundryman who does not take advantage of these is behind the times. A very little thing may constitute a vast improvement in a washing, starching or ironing machine.

A well-equipped steam laundry has the following outfit of machines and appliances, every one of which is essential in doing good work, and thus enabling the owner to compete successfully with the strongest of their competitors.

WASH-ROOM EQUIPMENT.

One large and one small washing machine; one twenty to twenty-six inch extractor; two stationary tubs; one hot water tank, heated by means of coil or drum, through which passes exhaust steam from engine; two hoppers; half a dozen nets; one thirty-gallon soap kettle; four two-gallon jars for bleach, acid, lye and blue respectively, to be used by washman, or washwoman, in removing stains, etc.; half dozen four-gallon wooden buckets; several dippers, etc.

STARCH ROOM MACHINERY.

One collar and cuff starching machine, or in lieu of that an old-fashioned dip wheel, churn, or cylinder starcher; one shirt starching machine; one ten-gallon starch kettle; one dipper; three strong baskets (on castors); one stationary tub with hot and cold water connections; one rubber roll wringer; several wooden buckets one smooth top starching table fitted with two draw boards for wiping bosoms; one cover of smooth stout ducking for starch table; one dozen cheese cloths for wiping off; one or two bone plait raisers; one eight-drawer drying closet, four drawers to be fitted for hanging 200 shirts with wire or wood hangers; two drawers fitted with bars for hanging underwear, etc., and two fitted up for collars and cuffs.

IRONING ROOM EQUIPMENT.

Two combined shirt, collar and cuff ironing machines or one bosom ironing machine, and one collar and cuff ironing machine. If the latter, one wing point ironing machine also; one neckband and wristband ironer; one body ironer; one collar and cuff shaper; one edge dampener and ironer, or combined appliance for folding lay downs and ironing edges; one steam seam dampener and tip folder; one hand seam dampener; one shirt, collar and cuff dampening machine; one dampening press; one blower, six to twelve inches, and gas generator, or, instead of the latter, generating burners for gasoline, attachable to ironing machine; the generator being the cleanest and safest arrangement, as it can be placed in a sunken chamber outside the premises. Where city or natural gas is to be had, only the blower is required. Shirt racks; collar baskets; finishing tables, ironing board; stove or gas arrangement for heating; twelve flat and four polishing irons; one eyelet raiser; plait raisers, etc., and one set of curtain frames.

SORTING ROOM EQUIPMENT.

Sixty or seventy sorting boxes, nine inches broad, eighteen inches deep, thirteen inches high; one distributing table; one small table for marking, with paper racks and cutter, twine holder, etc.

MARKING ROOM EQUIPMENT.

One small table and stool, marking ink stand, tags, etc.

OFFICE EQUIPMENT.

One writing desk; office chair; one laundry record; one ledger and driver's route book; also private account books; one bright, entertaining bookkeeper, blonde or brunette, either one will do, and after a while a big safe in which to stow away the surplus shekels.

It is estimated that seventeen hundred dollars would purchase the foregoing machinery and equipment, which, although far from being a complete steam laundry outfit—as neither flat nor family work are taken into consideration—would enable the owner to turn out the best quality of work in any desired finish, on quick time, and, therefore, under a practical and experienced manager, could hardly fail to prove a profitable investment in a business town of, say, four to six thousand, while in towns of ten to fifty thousand the proprietor could hold his own and add to it, too, and that in the face of all comers.

EXPERT.

MARKING AND SORTING.

ITS CONNECTION TO ALL PARTS OF THE BUSINESS.

One of the most responsible position of the laundry is that of marker and assorter, for on their work a great part of the business depends. When the marker is up with his work, the help gets the work to the assorting table on time; when the assorter gets that part of his work completed then the goods are at their destination or in the patron's home without useless delay. Let the marker be behind, what follows? The washman is delayed; next will come the starchers, and so on through the various departments, the result being that an hour lost at the starting point may be doubled at the finishing point.

Nothing advertises one's business so much, and with such good results, as promptness. Always make it a point to see that your patrons receive their bundles when they request them, even if it puts you to inconvenience. If you see some of your help looking around for something to do, while those in another department are rushed, go to your marker and see if the fault does not lie there. This of course applies more properly to a laundry doing an even volume of business per week.

First, the driver brings in the soiled linen. See to it that he has a list with owner's name, address and time wanted, written plainly thereon. Have the marker open only one bundle at a time, so as to avoid any chance of goods becoming mixed, and have them itemize same, putting owner's mark plainly on both goods and list. Many errors are made by goods being badly marked, or by being passed with nothing but a common ink mark.

The marker can easily assort the white and colored goods, underclothing, etc., also see to the hand washing of delicate colors, or fabrics as he checks them in, so that the washman will not be liable to overlook a colored garment and thrust it in the white load.

Next send your lists to the office and let the bookkeeper carry out the prices, then enter same on an itemized record book. If a laundryman keeps his lists and books he can talk intelligently from them, he is that much better off when a complaint is made. Let a man come into your office and say, "You left a statement at my house and have me charged with a fifty-cent bundle among the others of small amounts; I do not owe it." He has not the statement with him, but you can look at your ledger and from that refer directly to your record book, where you have an itemized copy of the original list, and you can show him where you are right even if he is "from Missouri."

Make it one of your firm principles to conduct your business so that at any time you know what you are talking about and have all your names, figures, etc., in writing; above all never let "guess work" be tolerated in your establishment.

The less talking and singing during working hours, the better for all concerned. It will annoy greatly and hinder in the work, especially in the work of the marker and assorter. As his work is mostly all brain work he should not be annoyed in any way. One can make a penitentiary out of a laundry by flatly prohibiting talking, but that is to an extreme; do not be overbearing, but be moderate. Have as little noise as possible from "out of repair" machinery, as well as employes. You will thereby gain more work from your employes, and fewer errors will be made in the work.

Goods to look well should be bundled properly. One can make linens look as though they had not been laundered by improperly wrapping them. See that the goods are piled evenly; collars and cuffs not bent out of shape, but wrap them in paper snugly and tie fairly tight, and the linens will retain their shape.

Trusting what few lines I have written may be of benefit to some one of the craft, I am, yours respectfully,

E. A. GARLICK.

HE HAS REASONS FOR COMPLAINT.

Editor National Laundry Journal:

I am simply a layman, not a laundryman, and one of those unfortunate men that have to patronize the laundries to keep my clothes in order.

Is it really necessary that a collar, cuff, or shirt should be marked every time it is sent to a laundry? I have always supposed that the ink used for this purpose was indelible enough to outwear the articles marked, and it would seem this was the case. Nearly every time that my clothes go to the laundry the person who attends to the marking seems to take particular pains to put my mark on the same, in a new place if they can find one, until the inside of the collars and cuffs are covered with indelible ink stains. I have four collars that have my private laundry marks on in eight places, all seemingly placed there by the same person. I know the ink used is indelible, as the first mark is as plain as the last, and these collars have been laundered certainly eight times. I would like to know if you can't do something toward correcting the evil. Yours, JOHN M. WATSON.

[This patron of the steam laundry has reason for complaint, as there is no necessity for remarking a piece of linen unless the old mark shows signs of fading. It is simply carelessness on the part of the markers.—ED.]

MARKING OF HOTEL LINEN.

Several Philadelphia hotels have adopted a system of numbering towels, napkins and other small pieces of linen. The object of this is to use the towels in rotation so that they will wear out evenly if used as numbered. The system is borrowed from some careful housekeepers, who numbered their small pieces and saw that all the numbers of towels used during the week were sent to the laundry. Another advantage is that the numbering of towels enables the hotel proprietor to tell how many are being carried away by the help and from what floor they disappear. The leak can then be easily stopped.—Hotel Gazette.

QUEER THINGS THAT ARE SENT TO THE WASH.

A $1,000 ROLL.

The public are not aware of how many times the employes of laundries find among the clothes sent to be washed, jewelry, money and other valuables. It is not a common thing, however, for a man to send his clothes to a laundry and with them a thousand dollars or more, but this actually did occur lately in Brooklyn, N. Y. A gentleman just on the eve of departure for Europe, sent a suit of pajamas to a laundry he had never patronized before, and in the pocket of the jacket was pinned a roll of bills, said to contain over one thousand dollars, which he had placed there carefully on retiring the night before, and intended to defray his expenses abroad. The marker—and her name was Gallagher—opened the bundle and at once discovered something foreign in the pocket of a suit of pajamas. On investigation she discovered it to be a roll of crisp U. S. bills as large as her waist. She opened and began counting them, and when she reached $500 nearly fainted. But she was an honest woman, and at once rushed into the office, pale and trembling over her find, and still more frightened over the temptation to keep the money. She said nothing except that the roll had been found in the clothes of a new customer and then returned to her work. The bundle was investigated and found to belong to a gentleman living in the vicinity, and the collector was at once dispatched to his house. When the money was handed the owner there was another excited person. Explanations followed, and he at once proceeded to the laundry, had Miss Gallagher called up and after thanking her, pressed a bill of large denomination into her hand, and departed.

Since then Miss Gallagher has been the queen of the Pearl Laundry, 228 Pearl street, Brooklyn, N. Y. But, not to be outdone in generosity, she at once proceeded to use the reward for the benefit of her associates, and a royal good time was had that night in the laundry.

ANOTHER ROLL, SMALLER.

There was quite a little excitement in Merrihew's laundry, Sherburne, N. Y., one evening when a gentleman came in and asked if there had been anything found there; being answered in the negative, he asked if they had washed the clothes he had left. They were under the counter, had not been washed and were handed up. The gentleman took from a pocket in an undershirt a roll of bills, $250 worth.

"OH, WHERE HAS MY LITTLE DOG GONE."

It was never our good fortune to hear one that could compare with the following story, truthfully vouched for by "Si." Waters, of the White Star Laundry, Cincinnati, Ohio:

"One day last week I was busy signing checks the telephone gave a frantic and long ring. The following conversation took place: 'Hello, is this the White Star Laundry? Well, when one of your drivers took away my family wash, amongst it he has also took away my dog.' This was a poser. But he insisted that I look the matter up and see if he was not right. I looked up the bundle and had it opened. Judge our surprise when we came to the center of it to find snugly ensconced and contented a little 2x9 dog. Well, this stumped me, but I lost no time placing the little fellow in a large size hamper and sent him home by the driver at once. On his return he reported that the loss of the little pet caused the greatest furore in the neighborhood. The ladies of the household were weeping over the loss of little Fido."

If there are any other laundrymen who can compete with this story we would like to hear from them.

WHERE SOME SHORTAGES GO.

"Dishonest household servants cause the laundries no little trouble," remarked an employee of a down-town concern. "It's occasional for them to annex a few shirts or collars, and now and then a stray handkerchief from the supply of their employer, and when the shortage is discovered it is generally charged to the laundry. At times we know perfectly well that the things claimed were never sent in, but we pay for them rather than have a row and lose a good customer. A lady of this city lost several fine lace handkerchiefs about a year ago and insisted that they were sent to the shop but never returned. She was perfectly sincere, and the bill was paid. Last week the handkerchiefs turned up. They were sent in with a bundle of things from another part of town, and when we came to trace them we found they had passed through four different hands. The original thief was a mulatto maid servant who had disappeared. On another occasion a gentleman lost several collars and was very angry. He said he was continually losing articles that way and brought his negro porter along to prove they had been sent in. The manager was about to hand over the value of the linen when he happened to notice that the darky was wearing a very handsome collar and told him to take it off. He protested vigorously, but it was secured and proved to be one of the lot. The rest were found in his trunk."

A DISCUSSION ON WASHING.

BY A. CASTAING, CHEMIST, OF NEW YORK CITY.

(At St. Louis Convention of L. N. A., October, 1899.)

As I have not had the time to write the essay which your honorable president asked me to read before this convention, I will make some extemporaneous remarks on the subject I should have written, that is, "Washing."

Two different detergents are required for cleansing soiled linen; that is, water and sodium or potassium salts of the fatty acids—commonly called soap. The water should be clean and sufficiently soft, viz., free from any organic or coloring matter, and should contain as little hardening substance as possible. Our experiments have shown that the latter should not exceed two and a half grains per gallon. I think I need not tell you the constituents of hard water; however, I will say they are iron, alumina, lime and magnesia—the latter two being chiefly in solution therein as sulphates and carbonates. Water containing organic matter in suspension can easily be purified, as you know, by means of filtration. Water containing more than two and a half grains of hardening salts should be treated chemically before it is fit to use in the washer. No mechanical process known to science can eliminate the sulphates and carbonates of lime and magnesia. It is only chemical treatment that can do it. The first thing, therefore, for the laundryman to know is the constituents of the water he is using in his wash room.

As I am not here to talk on anything more than it is necessary for you to know on the water question, I will simply describe to you the simplest method for washing with natural water. Natural water is that I have just described as containing no more than two and a half grains per gallon of hardening salts. As I am a New Yorker I shall mention New York water. The last analysis I made showed that New York water contains per gallon one grain of lime in its elementary state, and twenty-eight hundredths of a grain of magnesia, and also some iron and alumina. Now such water does not need any softening treatment to give splendid results in the wash room. I do not advise the use of soap in the first cold rinse, even when the water used is similar to New York water. I always recommend to carry on this operation: First, counteract with a mild alkali, such as monohydrate crystal soda, which is nothing but carbonate of soda in a highly concentrated form.

The process of washing which will answer all the purposes of a modern laundry is as follows:

1st. Cold water (about three inches above the inside cylinder) and two to three ounces of concentrated carbonate of soda, previously dissolved in water; run five to eight minutes, then exhaust.

2d. Warm water (same amount as above) and enough soap to make good suds; turn on a little steam so as to gradually heat up to any point short of boiling. Keep up suds right along without overflow, and run twenty-five minutes; then flood the wheel with warm water and exhaust. This brings up to the surface most of the lather and dirt, and is equal to a good rinse.

3d. Warm rinse, with plenty of water, run five minutes and exhaust. The goods are now ready for the bleach, and here is where my essay should have ended.

Mr. Barnes: I would like to ask Mr. Castaing a question. I had an analysis made of two kinds of water; the one had seven and a half degrees of hardness, two and a half degrees of which the chemist explained was temporary hardness, and the other five degrees permanent hardness. Now, can that be removed?

Mr. Castaing: As I said before, the constituents of hard water are salts of lime and magnesia, chiefly carbonates and sulphates, and also iron and alumina. Water usually contains more lime than magnesia. The lime is present in the shape of a salt, that is, as carbonate or sulphate of lime, and generally the carbonate is in larger quantity than the sulphate. In heating a water which is hard a certain amount of carbonic acid is evaporated, and consequently some of the lime in combination with it is precipitated and the water becomes softer. It is this carbonic acid which heat expels that constitutes the temporary hardness; therefore, water might be seven and a half degrees hard when it is cold and five degrees or less hard when it has been heated.

Mr. Barnes: My question was whether there was any way of romoving what the chemist called the five degrees of permanent hardness found in the tests I had made.

Mr. Castaing: It can only be removed by chemical treatment.

Mr. W. E. Fitch: I have a little story altogether different from the general run of washing stories. I have some water that is too soft. It takes hardly any soap to wash with it, but you can't blue in it. I would like to know what kind of water that is.

Mr. Castaing: I suppose it contains carbonate of soda. With that it is impossible to use aniline blue, but you might use ultramarine blue.

Mr. Metcalf: I would like to ask how the bluing would act with water softened with caustic soda? Would it act the same as with the soft water you were speaking of?

Mr. Castaing: Just the same. If you would have an excess of alkali it would have to be counteracted by acids. If the water you use contains a large quantity of hardening substance it is difficult for you to obtain the right shade with the aniline blue, because the aniline blue gives color only under the influence of an acid mordant.

Mr. Petersen: Would you recommend cold water or warm water for bluing?

Mr. Castaing: Warm water. After the goods have been touched by warm water in the process of washing, bleaching, scouring and bluing the goods should never be allowed to be chilled by cold water; but after the bluing they may be given a cold rinse in order to prevent the running of the blue, which occurs in the drying room or under the influence of hot starch.

Mr. Marsden: We blue in warm water. We use four to five ounces of oxalic acid in the process and have never had any bad results. Our goods are apparently very white and clear.

Mr. Castaing: Do you claim you eliminate all the oxalic acid in one rinse?

Mr. Marsden: Perhaps not, but we give two rinses. After bleaching we give it fully a ten minutes' rinse.

Mr. Castaing: The duration does not make any difference in the elimination of the oxalic acid.

Mr. Marsden: Is it your opinion that after the water becomes impregnated it does not make any difference how long you leave the water on?

Mr. Castaing: No. You may wash the goods in dirty suds for two hours and they would not come out any cleaner. It is about the same thing with the acid, Mr. Planck: I do not give my clothes a sour bath. I add a certain amount of acid in the making up of the bluing, so it amounts to about the same thing, in my estimation.

Mr. Oswald: We have been in the washing business about nine years, and we have experimented a little with souring processes. Outside of that we have done all our washing without using any souring process at all.

Mr. Petersen: I would ask if you use any sour in your bluing?

Mr. Oswald: I use acetic acid. I use the amount of acetic acid in bluing that is directed by the manufacturer of the bluing that I use.

WHAT IS WASHING?—WHY IS WATER OR ACIDS USED IN THE PROCESS?

(Written expressly for the National Laundry Journal.)

It is an unfortunate fact that many of the men engaged in the cleansing of cotton and linen wearing apparel are unacquainted with the fundamental principles which should govern the process. We are apt to be governed solely by results, that is to say, apparent results. If the batch of clothing looks well to the eye, of necessity the process used must be correct and it is adopted as our method, and, with the lack of modesty proverbial to our trade, we laud and magnify "our system" as though we were veritable Edisons. Again, the same lamentable ignorance is noticeable when we come to the materials used; we use certain things because others do and because we have a vague idea that these things produce certain results, while practically we have no accurate knowledge of the characteristics of these things or of the work they do.

It would seem as if the time were fully ripe for the dissemination of knowledge along the lines indicated above. The writer lays no claim to large or absolute knowledge; he has groped in the dark along with many others, but believing thoroughly in the exchange of ideas he gives the following reflections in the hope that they may be of benefit to some one.

WASHING.

Washing is, we take it, very largely, at least, a chemical operation. Clothing in use becomes impregnated with various foreign matters which are to be removed; in order to do this we make use of certain solvents. The water used is itself an almost universal solvent; it also serves as a vehicle through which the other solvents are applied. The mechanical action is not altogether necessary, but is used very largely as a time saver; that is to say, given garments containing a certain substance which we desire to remove—now suppose we have a perfect solvent for that substance, the act of solution will take place without mechanical action, provided sufficient time is allowed. A simple illustration of this point may be cited in the common iron stain, the solvent being oxalic acid; time only is required for the solvent to do its work, but it is quite possible that a vigorous rubbing over a corrugated surface will serve to remove, i. e., dissolve, the stain somewhat more quickly. The same fact would apply in the removing of any other stain. Again, the use of mechanical appliances enables us to employ our chemicals or solvents more economically. The washing of one hundred shirts in a washing machine at one time is simply a matter of economy over the plan of washing one at a time by means of a tub and washboard. It is well to understand these facts. The ordinary washing machine is valuable because it enables us to perform the chemical operation of washing economically, and for no other reason.

Now the starting point in washing is first to understand what we have to do. The matters which must be removed are grouped in the one generic term of dirt; some come from without and some from within. The former would be, usually, dirt; the latter would be exudations from the person, and the two become mixed, the one with the other. It is plain then that we must learn just what this composite is and what chemicals act as solvents of its various constituents, and which remove them with the least possible injury to the fabric itself.

In order to do this our starting point should be analysis. This involves a knowledge of chemistry, and a further knowledge of chemistry is required when we come to select the proper agents and to apply them. It is obvious that no such thoroughness is possible, nor is it necessary. We must take something upon trust; but the trouble is we take too much upon trust and go too much by luck and chance. A modicum of knowledge as to our problem and the agents we use is not only easily possible, but imperative. We shall therefore take up the question under the assumption that our only problem is the proper selection and application of agents. These we shall take up in the following order: Water, heat, soap, alkali, bleach, acid, blue.

WATER.

Water takes up somewhat of nearly every substance with which it comes in contact. This is why water is "hard," why it is so often impure; for this reason also it is valuable above all other agents in washing. Again, our solvents are active only while in solution. We will simply illustrate with the iron rust stain, as before. If we spread oxalic dry upon the stain it has no effect upon it, but if the stain is wet and the acid, itself in solution, is applied, certain chemical action begins, which results in the eradication of the stain. We apprehend that all agents used in the cleansing and bleaching process act in a similar way.

Water being a solvent, it is clear that it will of itself do a large part of the cleansing, and as it is cheaper and more available than any other, the work should be put upon it as far as possible, for this reason we advocate running the clothing for a time in clear water alone. Obviously this water should be reasonably pure and certainly free from such impurities as lime, magnesia, iron, etc. In other words, if the water is impure it should be purified before the washing operations begin.

HEAT.

The office of heat is threefold. We advance this theory without in any way trying to controvert other theories.

1st. Different stains are susceptible to solution at different degrees of temperature, hence the increase of heat should be gradual. We are aware that there are many who dispute this theory and disprove it by beginning their washing at a high temperature. Whatever success these persons may have, we are quite sure our theory is correct; at all events it is safe, and the one who follows it will make no mistake.

2nd. Some of our agents while soluble in cold water are much more soluble in hot water. Eight ounces of hot water will quickly and perfectly dissolve one ounce of oxalic acid. If we use the water cold we will find it a very slow process. What is true of this acid is true of the other agents used, especially of soap; hence the use of heat gives us a quicker, stronger, and more active solution. In the use of chlorine compounds there is yet another principle involved, and that is the discharge of the chlorine, which is more rapid in a hot than in a cold solution.

3rd. Having once obtained a solution it is imperative that it should be maintained until the process is complete, and this is accomplished by maintaining the temperature. This fact may be simply illustrated. Suppose you have in your machine a good live soap solution at a temperature of 150 degrees. Now you introduce cold water sufficient to reduce the temperature 20 degrees. Your suds at once "falls;" in other words, you destroy your solution. If we have made this point clear the object of the hot rinse becomes apparent. The soap must not only do its work, but afterward it must be gotten rid of, and this is more quickly and effectually done by keeping it in solution by the use of heat.

SOAP.

It has been demonstrated over and over again that clothing coming to the laundry always contains something under the head of dirt which is not soluble in soap, and yet soap is the most natural, effective and valuable detergent in the world. This being true it is evident that soap should be depended upon very largely, and should be supplemented with other agents only in so far as it is absolutely necessary. To this end we should be mighty sure we have a good soap. Laundrymen may make their own soap if they choose, but they should not essay to do this until they have acquired somewhat of the soapmaker's art; if they do, the "stuff" they produce may be anything but soap. Again, soap is easily adulterated. Sometimes these adulterations are harmless, such as silica, for instance; sometimes they are deleterious, and they are never valuable—save to the soapmaker's pocket. For these reasons the laundryman should learn some simple system of chemical analysis to the end that he may not impose upon himself or permit others to impose upon him.

ALKALI.

It is generally conceded that the best and most economical soap for laundrymen to buy is the kind denominated neutral; but neutral soap is not a perfect solvent for dirty clothing, and we find supplementation necessary. To some extent just here we are liable to make a mistake. In our effort to do rapid and clean washing we are apt to go to extremes and make use of powerful alkalies, such as caustic soda, when the milder alkalies, such as carbonate of soda and borax, are fully as good, if not better, and much less likely to do us injury.

Caustic soda is consumed by the laundries in enormous amount, and yet we maintain that it has little value as a detergent; in the saponification of grease nothing is better, but it hardly follows that it is equally good in the washing of clothing. Were one washing in large quantities such goods as overalls, which are usually very greasy, caustic soda is the fit and proper agent to use, but in the washing of shirts and collars—never.

We are not called upon to say much about borax. It is a pretty alkali—if I may be allowed to use the expression—and for some laundry purposes is superior to anything else, but for general work we are bound to pronounce in favor of carbonate of soda. I here allude to the dry carbonate. The sal soda of commerce is a carbonate, but generally impure and contains a large per cent of water. The dry carbonate, or mono hydrate, is available, and we unhesitatingly pronounce it absolutely the best laundry alkali. Fully 50 per cent of it may be added to a good neutral soap, making a detergent comparatively mild, but extremely effective.

BLEACH.

It is not perhaps generally known that the bleach also comes under the head of a solvent. There are stains upon the human wear which are not soluble in water, soap or alkali, so that the bleach comes in to perfect the cleansing operation. It is pretty clearly demonstrated that the laundry that would turn out a high grade of laundry work must resort to the use of bleach.

I should tread upon delicate ground if I were to tell laundrymen just what bleach they should use. Whatever I might say, many would cling to what we call the plain chloride of lime bleach. I shall content myself with one or two objections to this kind of bleach. First in the case of a simple water solution, we should say there was a lack of economy, as water will not take up but about 2 per cent of the chlorine, therefore a large amount must be used to get the desired results. No doubt in home-made bleaching solutions it is best to use sufficient alkali to make the solution "soft," so that it may be used with the soap; but even then I am of the opinion that certain of the lime is held in solution, and it is doubtful about this being gotten rid of in the rinsing operation. The objection here is too obvious to need explanation.

The only further reflection I wish to make here is the caution that the bleach should not be depended upon to do the work the soap and alkali should do. We incline to the opinion that it is wise to make the bleaching a separate and distinct operation; after the washing and rinsing is thoroughly done, then do such bleaching as is needed. This plan calls for more time than the common practice of combining the two operations, but I am certain that it is the better way. In this way the minimum amount needed may be more readily arrived at.

ACID.

As to the necessity of an acid or "sour," as it is called, I find a difference of opinion, some claiming that its use is unnecessary and unadvisable. The reasons given for the use of an acid are various. We know that the operation of bleaching in bleacheries is never done without an acid, so I find some urging that the use of chlorine is ineffective without the acidulated rinse. I would not in this connection use that word, but should choose rather to say incomplete. This is beyond doubt true, for anything like perfect bleaching the sour is necessary. Again, it is urged that the sour is necessary as a neutralizer; in other words, we desire to get rid of the chlorine after it has performed its work, and in order to do so we must use an acid. It is quite likely that there is truth in all these contentions. I am fully convinced that the sour should be used, and sure that harm comes more often from its lack than from its use. As to the particular kind of acid to use, that is a subject I must omit at this time.

BLUE.

Very little need be said on the subject of bluing, although it is a fundamental essential of the washing process. No matter how thorough the washing and bleaching may be done, there is a natural color of the fabric which remains; this is of a yellowish cast. The use of blue neutralizes this color, or, perhaps it would be more accurate to say, combines with it and produces white. The office of the blue then is to make the goods look white, and it really has no other office, although the notion of giving clothes a bluish tint is quite the vogue and is not objectionable, provided it is not carried too far.

SUMMARY.

In the foregoing there has been no attempt to lay down a positive system of washing. Our purpose rather has been to examine somewhat the principles that underlie the art of washing. In order to sum up, we submit the following questions and answers:

What is washing?

A chemical process by which clothing is cleansed.

What agents are used?

Water, heat, soap, alkali, acid, chlorine and bluing.

Why is machinery used?

For the sake of economy, as by its use the various agents may be rapidly and effectively used.

Why is water used?

1. Because it is a solvent.

2. Because the other agents must be in solution.

3. Because the active principles of the various agents are operative only in the presence of water.

Why is soap used?

Because it is the natural solvent for a large part of the matter to be removed.

Why alkali?

The soap used being neutral, it works slowly; to save time it is supplemented by alkalies.

Is caustic soda valuable in the wash?

Under ordinary conditions, no. The carbonate is a more effective and less harmful detergent.

Why is chlorine used?

The clothing of man becomes more or less impregnated with matters not soluble in soap or alkali, but which are soluble in chlorine, provided it is followed by the acidulated rinse; also some bleaching is necessary.

Why is acid used?

To complete the operation of the chlorine, to neutralize the same, and to act as a mordant.

Why is heat necessary?

Because different stains dissolve at different temperatures, and because the various agents used are most quickly soluble and most active in hot water. THEO.

THE ACTION OF SOAP.

The great hygienic value of an unstinted use of soap is nowadays instinctively recognized by all, though for the most part people are content with the fact that soap purifies and disinfects, without thinking it either desirable or interesting to study the means by which this object is attained.

The effective action of soap is based on its employment in a state of aqueous solution. When brought into contact with water, under suitable conditions of concentration and temperature, it is decomposed into free fatty acids and free alkali, in addition to which a portion of still unaltered soap passes into solution. On cooling, the free fatty acids unite with the dissolved soap, hot solutions producing a somewhat insoluble acid fatty-acid salt, whilst conversely, if cold water has been used in dissolving, the latter is left behind from the outset.

These facts are the outcome of experiments conducted by Krafft with chemically-pure alkali salts of the high molecular fatty acids present, in the form of glycerides, in the saponifiable fats and oils. The decomposition of soap into basic and acid soaps on contact with water, as reported by Rotondi, Fricke and others, does not actually occur; and the views held on this matter by those workers are explained by Krafft, by the simple circumstance that neutral alkali oleates, unlike the corresponding palmitates and stearates, are but slightly decomposable by water.

Hence, in the case of commercial soaps, which generally contain all three classes of compounds, the cold water extract will be found to contain neutral oleates and free alkali—forming the hypothetical basic fatty-acid salt—whilst the free fatty acids constitute, with the neutral salts of the solid fatty acids, the insoluble constituents of the soap. Thus, in washing with soap, four factors come under consideration: first, the free alkali; secondly, the free fatty acid; thirdly, the dissolved neutral fatty-acid salts; and lastly, the acid fatty-acid compound by contact with the free fatty acid.

If it is permissible to regard the operation of washing as a process of emulsifying the fats which everywhere are the cause of adherent dirt, and which are thus forced into combination and thereby removed, this object can be satisfactorily attained by means of the four factors above referred to, in conjunction with water and mechanical motion, rubbing, beating, rinsing. In the first place, the high moistening capacity of the soap solution—which power is probably attributable to traces of eliminated alkali—facilitates penetration into the material to be washed, driving out the air and gains an access to the greasy dirt. The task of removing the latter is shared by the undecomposed, neutral, fatty-acid salts, which emulsify the fat, and by the acid fatty-acid salts—the lather—which then envelop the no longer coherent particles of dirt, keep them in suspension and enable them to be got rid of by simple rinsing.

The alkali set free, which, in the case of neutral soaps, is very small in quantity under the used conditions of applying the soap in a solid state (soaping the clothes) plays a very inferior part in the washing process, far below that formerly ascribed to it in connection with the action of soap. In fact, it has little influence, even in dilute solutions of soaps since the liberation of alkali and degree of dilution are almost proportional; and, moreover, because the state of emulsion prevailing during the washing process ameliorates the effect otherwise exerted by free alkali on animal and vegetable fibers. These fatty emulsions exert an anti-friction influence in conjunction with the melted free fatty acids present in hot solutions of soap; and the beautifying effect obtained by washing with soap is further contributed to by the considerably reduced mechanical effort necessary to effect the removal of dirt when the lubricating action of soap comes into play.

That the physical effect of soap is also important is evident from the fact, discovered by Quincke, that spontaneous whirling movements occur in soap solutions, as a result of osmotic processes, which movements help to loosen the adherent dirt in a much less injurious manner than can be attained by hand-rubbing, etc., whilst at the same time they tend to increase the persistence of the lather. These vortices described by Quincke are also increased by the peculiar decomposition sustained by soap in presence of water.

The theory established by Jevons for explaining the action of soap in washing has a certain connection with the reports of Quincke. According to the former the soap particles present in water exhibit "pedesis" in a high degree, and consequently a great tendency to automatic movements, which favor the removal of dirt in the operation of washing. This theory, which apparently is based on less exact experiments than that of Quincke, has been combated on many sides; it is only to show the tendency to explain by physical processes the undeniable excellence of the operation of washing with soap.—*Chemische Revue.*

WASHING, BLUING AND BLEACHING.

With Formulas for the Same, for the Benefit of American and English Laundrymen.

(Written expressly for the National Laundry Journal.)

Ten years ago it was nothing uncommon for a wash man to take three hours or longer to wash a load of shirts and collars; now sixty to one hundred minutes is considered sufficient time to complete from start to finish the washing, bleaching, bluing and wringing process.

In regard to bleaching, I will supplement my remarks in a former article by saying that bleaching, as practiced in American steam laundries, is not necessary in Great Britain, unless there is a demand for the highest grade, or perfectly white work.

The ideal of the American laundryman, and his patrons as well, seems to be on a higher plane than that of the British laundryman and his constituency, a whiter and better grade of work being demanded in America.

As a rule, in American steam laundries, white shirts, collars, and ladies' wear are subjected to the action of chlorine, used as a detergent for the removal of discoloring matter, etc., just referred to, while bed linen, table linen, and towels are only bleached as occasion demands for the removal of stains, etc.

Suds, or rinse water, is seldom used twice in American laundries. In some English laundries the rinsing water of one load is used for the first suds of the succeeding lot; in other cases the second suds is saved and used over again as first suds on the next batch. Americans believe in clean water for every separate operation from start to finish, at whatever cost, and we may safely assume that water is more expensive in the United States than in any part of the United Kingdom.

BLUING.

Although aniline dyes have long ago superseded most of the vegetable, animal and other descriptions of coloring matter in British dye houses, the British laundryman still jogs along in the old rut, using indigo, ultramarine or Prussian blue in the washhouse, while the American laundryman adopted the coal tar colors for bluing purposes as soon as the price brought them within his reach.

Artificial ultramarine, which is used in the majority of English laundries, is not suitable for machine bluing. Being insoluble in water, it streaks and clouds the goods, no uniform shade being obtainable with it.

Any desired shade of blue, from the lightest to the darkest, may be obtained by a mixture of the beautiful aniline crystals; the bluing is easily prepared for use in large or small quantities, and, like "John Barleycorn," when properly made and bottled, it improves with age. I append a formula for preparing the bluing: One liquid ounce of blue diluted in a pail of water, and poured slowly into the machine while the cylinder is running toward the operator, will be found sufficient for an ordinary load of shirts, collars, or ladies' clothes · and three-fourths of an ounce for bed or table linen.

CHEMICALS.

The principal chemicals used in America for washing purposes are chip soap, neutral or alkaline, made from tallow, vegetable oil, or both; bar soap, made from tallow or oil; caustic soda; caustic potash; soda ash; sal soda; powdered borax; acetic acid; oxalic acid, and aniline blue. The chip soap is used for machine washing exclusively. Bar soap for washing colored cotton pieces and woolens by hand. The caustic lyes are used principally in laundries where they make their own soap, and for that purpose soda ash and sal soda are used in building up the soap to the proper alkaline strength to suit the water, and in making bleaching liquor. American powdered borax is used as an ingredient in soap for increasing its detergent strength, for the alkaline rinse either before or after washing, and as a component in the bleaching liquid. Chlorine, a preparation of which may be bought ready for using in suds, is used for bleaching purposes and for removing stains. Chlorine, soda, borax and water are the elementary parts of bleach as prepared by laundrymen for their own use.

The following washroom formulas may be taken as indicative of the general principles followed out in American methods of washing, considering washing to be a combined chemical and mechanical operation. The formulas also indicate the system as carried out in the assorting of the various articles preparatory to washing.

WASHING WITHOUT BLEACHING.

To wash a load of white shirts, white collars and cuffs or ladies' clothes:

1st. Let enough warm water run into the machine to saturate the clothes thoroughly and leave about four inches of water in inside cylinder; start machine and then pour in as much soap solution as make a light lather; run for 25 minutes; discharge.

2d. Let in hot water as in first instance; pour in soap enough to make and maintain a brisk suds; inject steam and bring temperature of water to boiling point; run 30 minutes; discharge.

3d. Let in water as before; pour in six ounces powdered borax dissolved in six gallons hot water; turn on steam and heat quickly to 200 degrees F., or thereby; run 10 minutes; discharge.

4th. Let in enough cold water to float the goods; run five minutes; discharge.

5th. Repeat, rinse as above.

6th. Let in cold water enough to cover the clothes; pour in one ounce liquid blue—more or less, according to strength—diluted in two gallons of cold water; run 10 minutes; discharge. Keep machine running from start to finish. Time, 90 minutes.

This formula will give very satisfactory results as far as washing goes, but will not remove yellow seams or edges, nor stains that will not yield to soap and water. Such stains may be treated with chlorine in separate bath and then marked with turkey red thread and put back into second suds of the succeeding lot, rewashed, rinsed and blued.

WASHING AND BLEACHING.

To wash and bleach a load of 100 shirts, 500 collars and cuffs, or an equivalent bulk in ladies' clothes:

1st. Let enough warm water into the machine to soak the goods thoroughly and leave two to four inches of water in cylinder; start the machine and pour in as much liquid soap as make a light lather; run 25 minutes; discharge.

2d. Let in hot water into machine; then pour in soap enough to make and maintain a lively suds; turn on steam and keep the temperature of the suds rising; run 15 minutes; then add seven ounces bleaching liquor; heat the water quickly to boiling point; run 15 minutes longer; discharge.

3d. Let in hot water; pour in six ounces powdered borax dissolved in two gallons hot water; heat quickly to boiling point; run 10 minutes; discharge.

4th. Let in enough hot water to float the goods; run five minutes; discharge.

5th. Let in cold water to float the goods; pour in four ounces acetic acid diluted in a pail of cold water; run five minutes; discharge.

6th. Let in cold water to cover the clothes; pour in one ounce liquid bluing diluted in a pail of cold water; run 10 minutes; discharge.

This formula will give clean, clear, white results and a nearly uniformed shade. Time, 90 minutes.

WASHING COLORED GOODS.

To wash a load of colored shirts, colored collars and cuffs, or miscellaneous cotton colored goods:

1st. Let enough warm water into machine to soak goods without floating them; start machine and pour in as much of a neutral soap solution as make a light lather; run 20 minutes; discharge.

2d. Let hot water into machine; then pour in soap enough to make up a strong suds; inject steam slowly to maintain the temperature; run 20 minutes; discharge.

3d. Let in hot water to float the goods; pour in 50 ounces powdered borax dissolved in water; run 10 minutes; discharge.

4th. Let in warm water; run five minutes; discharge.

5th. Let in enough cold water to cover the goods; pour in one ounce bluing diluted in a pail of water; run 10 minutes; discharge. Time, 70 minutes.

Good results on combination colored and white articles are obtained by this formula of washing. An increased quantity of borax improves the white parts and clears the colors.

SHEETS AND SLIPS.

To wash a load of sheets, pillow and bolster cases:

1st. Let enough water into machine to soak the goods and leave them half covered with water; start machine; pour in soap to make a light lather; heat water gradually to 130 degrees F., or thereby; run 15 minutes; discharge.

2d. Let in hot water; turn on steam; put in soap to make a fairly strong suds; heat quickly to boiling; run 20 minutes; discharge.

3d. Let in hot water to float the goods; pour in five ounces powdered borax dissolved in a pail of water; keep temperature of water rising to 200 degrees F.; run 10 minutes; discharge.

4th. Let in warm water to float the goods; run five minutes; discharge.

5th. Let in cold water to cover the goods; pour in enough bluing, diluted in a pail of water, to give desired shade; run 10 minutes; discharge. Time, 60 minutes.

Omit the first suds in washing hotel bed linen that is washed every time it is used.

TABLECLOTHS AND NAPKINS.

To wash and bleach a load of 60 table cloths or 600 table napkins:

1st. Let warm water into the machine to soak the goods and leave them half covered; start machine; pour in enough soap to make a light lather; run 15 minutes; discharge.

2d. Let in hot water; turn on steam; pour in soap to make a brisk suds; run 10 minutes, keeping the temperature of water rising; then pour in six ounces bleaching liquor; run 15 minutes; discharge.

3d. Let in hot water; heat quickly to boiling; pour in five ounces powdered borax dissolved in a pail of hot water; run 10 minutes; discharge.

4th. Let in hot water to cover the goods; run five minutes; discharge.

5th. Let in cold water to cover the goods; run five minutes; discharge.

6th. Let in plenty of cold water; pour in bluing enough diluted in a pail of water to get the shade desired; run five minutes; discharge. Time, 70 minutes.

Use very little blue on table linen, as the material takes the bluing very readily. Omit the first suds and only use one-half the quantity of bleaching liquor as given on hotel table linen that is washed daily.

TOWELS.

To wash a load of household towels.

1st. Let in warm water to soak the goods; start machine; pour in soap to make a brisk lather; run 10 minutes; discharge.

2d. Let in hot water; turn on steam and heat to 200 degrees F.; pour in soap to make a good lively suds; run 15 minutes; discharge.

3d. Let in hot water to float goods; run five minutes; discharge.

4th. Let in cold water to float goods; run five minutes; discharge.

5th. Let in cold water; pour in a little bluing; run five minutes; discharge.

Omit first suds in washing hotel towels that are washed frequently. Use a strongly alkaline soap solution on kitchen towels, dusters, aprons, etc., and wash by above formula.

FORMULAS FOR SOAP, BLEACH AND BLUE.

The following are our favorite prescriptions for preparing soap, bleach and blue for use according to directions given in foregoing formulas. Soap for white cotton goods:

Dissolve 30 pounds neutral tallow chip soap, 20 pounds sal soda, 10 pounds powdered borax in 40 gallons water.

Bring water to the boil, then put in the soap, soda and borax and cook slowly till all are thoroughly dissolved, when it is ready for use.

Soap for colored goods and woolens:

Dissolve 30 pounds neutral tallow chip soap and 15 pounds powdered borax in 40 gallons water and cook per foregoing recipe.

The alkaline strength of a soap solution prepared in accordance with directions given is so much reduced when distributed in the washing machine that it will not hurt a fibre.

To prepare bleach for use in washing:

Dissolve 10 pounds chloride of lime, 20 pounds sal soda and 10 pounds powdered borax in 20 gallons of water.

Mix the lime with a little cold water to the consistency of paste, then put in the soda, add water to make up the measure, stir up thoroughly, boil for five minutes, let cool and settle, then draw off the 20 gallons of clear liquor into a carboy, or other covered vessel, and use as directed.

To prepare bluing:

One ounce aniline blue, one pint acetic acid, one ounce oxalic acid, enough distilled water to make up one gallon; bring the water to a boil, put in the blue crystals and boil 10 minutes; then put in both acids, stir up well, boil five minutes, strain and bottle ready for use.

Sometimes a mixture in equal proportions of a light and dark blue suits the water best; in other cases a special brand prepared by the machinery and supply houses gives highly satisfactory results. Aniline blue can be had to suit any water that is fit for laundry purposes, and to give any desired shade with such. EXPERT.

QUALITY VS. QUANTITY.

Expert Views Both Sides of the Question.

(Written expressly for the National Laundry Journal.)

It is not imperative that a washman should be a university graduate in chemistry, but it is essential that some one in connection with the laundry should know something of the nature of the fabrics of which the goods are composed, and of the safest and best methods of treating these while undergoing cleansing.

The ideal wash room, whether equipped for doing one hundred or one thousand dollars' worth of work per week, has plenty of light, a high ceiling, is well ventilated, and has all the known facilities and fittings for doing good work at the minimum cost for labor and supplies.

In going round among the laundries one comes in contact with laundry proprietors who are somewhat at variance as to the modes and methods of procuring and doing the work. Here is a laundry that has made a success by charging good prices, employing a superior class of help, bestowing care to the very minutest detail on the work, and using the very best supplies in every department; a quality and price laundry, one might denominate it. Another laundry is conducted successfully by securing large quantities of work at low rates and applying the same principle in the hiring of help and the purchase of supplies and machinery. Of a necessity the methods of doing the work in the latter class of laundries differ from those of the former right through from washing to finishing.

In New York, Philadelphia, Chicago, St. Louis, and other large cities, there are representative plants of both the high and low priced orders. The former each do a fair amount of work, and I need hardly add, have a lucrative business. The second do a larger trade, picking up work all over, anywhere, anyhow, and at any price, and make money notwithstanding. The washing methods in two such laundries are totally dissimilar. Illustrative of this, let me give two cases in point, which are given from personal experience, but for obvious reasons the names of the laundries are withheld:

WASH ROOM METHODS IN THE HIGH GRADE LAUNDRY.

The white shirts, of which there are from eighty to a hundred in a load, are packed into the washer singly and subjected to a warm alkaline rinse of ten minutes' duration; the bath being made up of four ounces caustic potash and four ounces of powdered borax, to twenty-five gallons of water. This is followed by a light warm suds in which is used a pure neutral tallow soap, and run for thirty minutes. Next comes a second but stronger suds in hot water, the same kind of soap being used. After running fifteen minutes eight ounces of liquid bleach is added and the temperature increased to nearly boiling point, which heat is maintained for fifteen minutes, when the goods are rinsed in hot water for ten minutes, followed by a five minutes' rinse in warm water and another ten minutes' rinse in cold water, to which is added seven ounces acetic acid. After this the goods are blued in cold water, pure aniline, cut with a little acid, being used, when they are again rinsed, leaving them a clear, blue-white shade which holds well against heat of starch and dry room. The water having been thoroughly extracted from the goods they are taken to the starch room, where each piece is examined singly and those not thoroughly clean, or on which sweat, iron or other stains appear, are taken to the tub and rewashed or treated chemically, all stains being removed where possible. Collars and cuffs are washed separately by same formula as given for shirts, ten ounces of bleach being used and the time of bleaching in boiling suds being extended ten minutes.

Colored shirts and collars are washed by themselves, two suds being given with pure neutral tallow soap, six ounces of a mild bleaching agent being added to second suds, which whitens the discolored white parts of the goods to some extent without affecting the colored parts. Acetic acid is used as a sour, the goods being then rinsed in two hot and one cold water baths.

Woolens, silks and colored goods which are liable to fade, are washed by hand in suds made up of borax, potash and olive oil soap, which cleans and softens the material without shrinking.

Ladies' clothes, having lace or fancy trimmings, are enveloped in nets and washed with white shirts.

Bed linen, table linen and towels are washed together, as are also kitchen towels, dusters and other much soiled pieces. A slightly alkaline soap is used on these, and no bleaching is done except for the removal of stains on table linen, etc.

Blankets are washed in machine in suds composed of neutral soap, potash and borax. Lace curtains are washed by hand and bleached when necessary, being afterwards boiled and rinsed through several baths.

Every article when finished and ready for the sorting table, is examined by lady experts, all defective work being returned to ironing, starching or wash room, as the case may be, to be done over before being sent out.

Torn articles, including shirts, ladies' wear, underwear, curtains, etc., are rough dried before being starched, and repaired by practical seamstresses without extra charge.

WASHING METHODS IN THE LOW GRADE LAUNDRY.

In the low-priced laundry a large business is done; the machines being loaded up to their capacity, as a rule from one hundred to one hundred and fifty white shirts, or ladies' wear being handled at a load, according to size of machine, there being several sizes of washing machines in use.

The white shirts and ladies' clothes, with the exception of fancy pieces, which are enclosed in nets, are bundled into the machine, an armful at a time, and given a suds of thirty minutes in warm water and strong soda soap; another suds follows hot and strongly alkaline for fifteen minutes, when a quantity of bleach is added sufficient to act energetically on the stains and badly soiled articles. (Indiscriminate bleaching I call it.) The idea being to get the dirtiest article in the lot white without taking into consideration the effect on the fiber, or the fact that 75 per cent of the lot didn't require but a slight bleach to make them clear and white. The goods are then run fifteen minutes longer at boiling heat, then rinsed for five minutes in boiling water, then an effective sour of oxalic acid is given—seven to eight ounces being used to a load—followed by another rinse of five minutes in cold water, and lastly the blue water in which the goods are run for a few minutes. Wringing, starching and ironing follow in quick succession, no examining is done, no stains removed, no sewing done, there are no go-backs, except for catch dirt, scorching or something of that kind. Everything goes; quantity and not quality is the watchword right through.

A soda soap made from the cheapest tallow is used; the bleach is prepared from chloride of lime and caustic soda, and a cheap loaded blue completes the list of supplies for washing purposes.

Colored goods are washed with the soap as described above; they are washed separately; get two short suds, two rinses, a blue, and they are done.

White collars and cuffs are washed separately, two suds are given, in the second of which a strong bleaching suffices to clean and clear the goods quickly. Washing, rinsing, and bluing occupy eighty to ninety minutes' time.

Fine woolens and silks, as also some colored pieces, are washed by hand with a hard, neutral tallow soap; all other wools, blankets, etc., are washed in machine with a soda soap.

Flat work is assorted as in first instance, washed with soda soap, and bleached occasionally in suds, as required.

It will be readily understood by the practical laundryman that a considerable difference exists in the cost for labor and supplies in these two methods of doing the work. Were laundry No. 2 to do the same kind of work, by adopting the methods, taking the same care of the goods, and using the same quantity of supplies as laundry No. 1, it would either go into the hands of a receiver or shut down for good inside of three months.

GOOD RESULTS.

A first-class laundry aims at getting good results without injuring the fabric; time and money being expended on the work, and no harsh measures adopted that can possibly be avoided. In the second-class laundry no discrimination is used whatever; all that is aimed at being to get the work clean and white at the lowest possible cost for labor and supplies. It is easy to get nice, clear clean work by the chemical process at the cost of the material.

Laundry profit is essentially a profit on labor; the extra help required and higher rate of wages paid, in the better class laundries run up the costs under this head to 50 or 60 per cent of the net income. In the low-priced laundry the employment of cheap labor, the saving effected in time by chemical washing and rushing the goods through just as they come, and the increased quantity of work renders it possible to keep the cost of labor as low as 60 or 70 per cent of the revenue.

Money can therefore be invested in a low-priced laundry doing a large business and yield as good interest as if it were invested in a high-priced laundry doing a limited business. There are large laundries doing good work; their price list being 25 per cent under the usual standard rates; their economic methods of collecting and delivering very nearly balancing the reduction in price. Some low grade laundries quote prices all of 40 per cent under standard rates. An old and successful laundryman that I have heard tell of used to calculate on a profit of ten cents a day on each employe, and he had hands enough to bring him in a snug income. Quantity did it. EXPERT.

WHERE CARE IS NEEDED.

Some Useful Hints as to the Best Way to Wash Nice Things.

The first essential in careful washing of fine, delicate or expensive stockings is to have an absolutely clear soap solution in tepid water. Put in your stockings right side up, rub well, turn and rub on the wrong side. If the color is at all delicate, rub the feet first, then the legs, so as not to leave the latter long in the water. Rinse thoroughly in water of the same temperature, wring dry, and hang from the tops of the stockings so that if any water settles, leaving a slight discoloration, it will be in the toe instead of the leg. If the colored stockings show signs of running or fading, the color may be set with alum or salt, bearing in mind that alum is as apt to set the dirt as well as the color.

SILK STOCKINGS should be washed and rinsed in luke warm water and wrung between towels. Silk underwear should be soaked twenty minutes in warm suds and ammonia water, allowing a tablespoonful of ammonia to a gallon of water. Rub gently with the hands, squeezing, pressing, but never scrubbing. Do not be too lavish in the use of soap, and never rub directly on the garment—always use it in solution. Rinse through two clear warm waters of the same temperature as the suds, adding to the last water a trifle of ultramarine blue and a teaspoonful of liquid gum arabic. Smooth out and hang carefully as possible so as to avoid the wrinkles so hard to iron out of silk without injury to the fabric. When nearly dry press under muslin.

Doilies should be washed gently in warm suds, using only the purest soap. If the colors are inclined to run, rinse until entirely clear; take out of water without ringing, lay on a heavy cloth and lay another over it to absorb the moisture. If ironed while damp, linen needs no starch; if any is used, however, it should be no more than just a suspicion in the last rinsing water.

Shawls and other crocheted or knitted wools may be washed in warm suds in which a tablespoonful of ammonia to a gallon of water is used. Let the article soak about twenty minutes, then squeeze it in the water until clear. Rinse in clear water, being careful that the temperature remains the same, and do not stretch too much in ironing or pulling.

TO AVOID SPOILING THE COLORS.

As a simple guard against destroying bright yet delicate colors we will submit the following:

Light blue should be carefully washed with a good soap in hot water, and rinsed immediately in cold salt water. Hot starch should never be used, and they should be dried in the open air out of the heat of the sun. Hot starch should be avoided when starch is needed, in all delicate shades, and the goods should never be permitted to dry thoroughly, but taken down when just damp and ironed quickly. When they are dampened after being thoroughly dried, the colors are liable to run.

If cottons are spoiled by alkali they can be restored by rinsing immediately in acidulated vinegar water. Light shades, such as lilac or violet, need setting at once by soaking a short time in a light solution of alum water.

A GOOD FORMULA.

Editor National Laundry Journal:

I have tried to bleach with soap which works fine and helps to lather nearly one-half. It may be more expensive than most in use, but I will give my formula:

Two pounds chloride of lime.
One pound soda ash.
One pound borax.
One-half pound potash.
Six quarts boiling water.

For bleach, after soap is rinsed out, I use two pounds chloride lime, one pound borax, six quarts water.

Yours, C. S. Smith.

* * * * *

As Mr. Smith says, there are many different formulas for making a bleach, and the most of them are thought to be suited to the conditions of the water, as well as the kind of soap used. We have no formula ourselves. We have a number of advertisers who are manufacturers of high grade bleaches, and in justice to them we could not furnish anything on the subject aside from that furnished us by laundrymen who request their formulas to be made public.

HOW TO CLEAN WASHERS.

Editor National Laundry Journal:

Please state in your next issue the materials that can be used to clean washing machines. No lime or caustic is used in our plant. The water is very hard, a white substance accumulates on the wood and on the iron bands of the inside cylinder. Subscriber.

To cleanse your machines, run in from three to four inches of water; put in one pound of muriatic acid, and run for ten minutes. An old broom cut off short so as to make it more stubby, and held against the inside cylinder, will assist in and hasten the operation. Sulphuric acid can be used if desired, but a little more in quantity will be necessary. There may be some trouble with the iron rusting in this operation, but if machines are kept in active use it will not be serious.

PETROLEUM FOR WASHING PURPOSES.

The system of washing linen with petroleum, which is customary in certain parts of Russia, has been introduced into a German military hospital. Fifteen grammes of petroleum are added to fifteen litres of water containing soap and lye, and the linen is boiled in the mixture. The cleansing is thus rendered much easier than by the usual method, the linen suffers much less, and assumes a whiter color. Finally, the expense is decreased, thanks to the economy in soap. Encouraged by these results the officers at the head of the general staff of the army have ordered trials to be made on the above plan in all the military hospitals in Germany.—Exchange.

WASHING FLANNELS.

Editor National Laundry Journal:

All flannels cannot be washed together. No brown or orange colored garments should be washed with white or gray. I use soft or condensed water, and always use good soap. I draw into my 50 or 75-shirt washer 20 to 25 gallons of water, according to the number of flannels I have to wash. I put in the water three to five tablespoonfuls of powdered borax, dissolved in two or three ounces of ammonia, turn on steam and warm the water to about 92 to 94 degrees; then I put in soap enough to make a good heavy suds; start the washer and let it run until the suds is well broken, or almost a solid foam; then I open the washer and plunge the flannels into it, and let it run not more than twelve minutes.

I have ready for use my tub for rinse, with the water about 2 or 4 degrees warmer than the wash water. To this I add a little borax and dissolve same carefully. I strip, not wring the flannels as they are taken from the washer, and immediately souse them in the rinse water. I then strip them again and place in the extractor, letting them run in the same from six to eight minutes, then hang all in a hot dry room; the hotter the better, as good steam heat does not hurt flannels. When dry I take them to the ironing room and am careful to have them ironed or pressed under a heavy cheesecloth, wrung out from luke warm water.

Some will say, do not hang flannels in a hot dry room. I say, if they are washed and handled properly, and not left to lay around in baskets, or on tables, until some convenient time, but taken immediately to a hot dry room, and the balance of the method followed, the result will be as fine work as can be produced. Try it and be convinced. J. L. COLLIER.

* * * *

The following is from a laundryman connected with a large military laundry where only flannel blankets are used by the cadets, and one who has had a long experience in laundering these goods. His experience ought to be of service to every laundryman who is in doubt, or has trouble in washing flannel blankets:

Editor National Laundry Journal:

I use wool soap chips, from which I make a soft soap. I first make a good rich suds, using warm water; then I put in the blankets and let them soak about thirty minutes; then run in the washer about twenty minutes, and give one rinse in water of the same temperature. Great care should be used in putting them in the extractor. After they are wrung out put them in the dry room, where they must dry slowly. I usually put ammonia in the suds, as it helps loosen the dirt. We have a great many blankets to wash and never shrink any of them.

KNOX.

HOW THEY SHRINK.

The shrinking of woolen underclothes is not all due to the washing by any means. Much of the shrinking takes place on the person. What makes wool shrink is a combination of heat, moisture and motion. Those are the agents applied in felting fur or wool into hats or other forms. Shrinking and felting and fulling are different words for the same action. On the person there is warmth, the moisture of perspiration and the constant motion of the body, even by breathing. Some pure wool underwear won't shrink much if carefully washed, but it is not proof against the action of the agents just mentioned. If you can find an all-wool texture that will resist all the shrinking tendencies of actual wear you will have got a great victory over nature.—Men's Outfitter.

WOOL SHRINKAGE AND BLEACHING POWDER.

The Irish Textile World gives the following recipe to prevent wool from shrinking, and though it refers to the product when it is manufactured, there is no reason why laundrymen could not use it as well:

The use of chloride of lime, or bleaching powders to prevent wool from shrinking is suggested from the following note: Twenty-five gallons of water are taken and 6 pounds of bleach added. The goods are rapidly immersed and kept in it for 10 to 15 minutes; take out and immerse in a weak sour of hydrochloric acid standing at 2 degrees Tw. for 10 minutes, when they are taken out. With these proportions the wool will not have a yellow color.

THE USE OF BLEACH AND ACID IN AN UP-TO-DATE LAUNDRY.

(Essay by Chas. I. Goodhart, Chicago, at Convention of L. N. A., St. Louis, Mo., Oct. 10, 1899.)

Chemicals are used in one form or another in every laundry in existence; even by the housewife who washes with washboard and tub at home. The soap, bluing and starch used are chemical preparations. It seems ridiculous for a laundryman to attempt to mislead his patrons by saying he does not use chemicals in his laundry, when it is known that the water, soap, steam and starch, regardless of the bleach and acids which he uses, are composed of the elements of chemicals.

There is no doubt that chemicals are used in a modern laundry and that they are absolutely necessary. But how should they be used to obtain the most satisfactory and desirable results, without injury to the property of the laundry's patrons?

No attempt will be made to speak of all the chemicals used, as the subject of this paper is "The Use of Bleach and Acid in an Up-to-date Laundry."

Bleach is used in a modern laundry for the purpose of removing certain coloring matter that has not been removed by the action of soap and water in the washing machine.

The washing process having been completed; that is, the linen having been freed from dirt by soap and water, the discoloration or oxidation still remaining, the process of bleaching is next required to entirely restore whiteness to the linen.

There are innumerable chemicals said to be available as bleachers, but the one most commonly employed in the modern laundry is the solution containing the greatest percentage of chlorine.

To bleach properly, it is well to first remove as much of the impurities from the goods as possible by rinsing after sudsing; the number of rinses required can be ascertained by subjecting a small quantity of the rinse water to a few drops of phenolphtalien test solution, which is used as an indicator and turns red if alkali be still present in the water.

After rinsing the goods are to be subjected to the chlorine bath, which should not be too hot.

In some laundries the bleaching process is combined with the washing process, but greater success has been attained by performing the two processes separately.

Ordinary pieces sent to the laundry, such as shirts, collars and cuffs, are allowed to remain in the bath from ten to thirty minutes, the time depending upon the quantity of available chlorine in the bath. A great mistake too often made is to hurry this operation.

After the chlorine bath the goods should be again thoroughly rinsed. Starch iodide test solution (dissolve 10 gms. of starch in 100cc. of water, then add 2 gms. of iodide of potash) can be used to denote the presence of chlorine (by turning blue) if any still remains in the rinsing water.

The use of acid is next employed for the purpose of expelling the chlorine from the goods, thus hastening and completing the bleaching operation. To be, perhaps, more explicit, linen wearing apparel having been relieved of all soil as a consequence of the washing process, and there still remains a yellowishness, a result of organic matter, something must be employed that will act quickly upon this matter to entirely remove it with the least amount of injury and leave the goods absolutely free from impurities. In the absence of natural elements, chlorine has been found to perform this service, but its action in water is quite slow, so that, in order to hasten it and make it act more completely, an acid is used for the purpose of liberating all of the gas, which completes its action upon the organic matter, and in so doing removes the discoloration caused by it.

There are several different kinds of acids used for this purpose, such as muriatic, sulphuric, oxalic and acetic.

For years laundrymen subjected the goods described to no further operation than to attempt to rinse out all chlorine and alkalies and then blue, but today it is customary in the modern laundry to expel all chlorine by an acid bath following and completing the bleaching.

As stated, several acids perform this work, but some are more difficult to remove after having been used than others. Acetic is preferable for this purpose, as its overuse is less injurious to goods than some of the others named, it being removed by the heat in the drying room.

The quantity of acid used should be only sufficient to drive out remaining chlorine and neutralize alkali which may remain after rinsing subsequent to the bleach bath, and yet leave the goods slightly acid for the blue bath. If so much acetic acid be used as to more than perform this duty, its only harmful effect will be to over develop the bluing, causing thereby a greenish instead of a bluish tint, while if too much of either oxalic or sulphuric be used, the acid remaining in the goods will injure them.

It is not advisable to use sulphuric or muriatic acid on account of their great corrosive power and liability of coming into contact with linen or other goods, as a consequence of carelessness or accidents of the employes handling them. Acetic acid in the same hands is a great deal less injurious.

In the up-to-date laundry, to produce the great essentials, perfect work and the saving of time, the use of bleach and acid is indispensable.

ALKALI TEST.

Dissolve 1 gm. of phenolphtalien in 100cc. of diluted alcohol. The solution is colored deep purplish-red by alkali. Acid decolorizes it.

The President: The subject is now open for discussion.

Mr. Armstrong: Those who were here eight years ago will remember that Mr. Jones, of Ft. Wayne, Ind., had an article on bleaching, and he stated that he used no bleach except steam. In washing we first run cold water, then suds, then the bleach, then rinse, then suds. We wash with one suds and bleach the second rinse after that. We do not need two suds, as a rule, unless the clothes are very dirty.

Mr. Lyons: I would like to ask Mr. Armstrong how long he runs the first suds.

Mr. Armstrong: About thirty minutes, the first and only suds. We wash in one-half or two-thirds the time we used to.

The President: Some do not boil at all now. I believe Mr. Hagen does not use boiling in his process.

Mr. Hagen: No, we do not have steam connections with the machines at all; but in the use of hot water we are very particular to have the water at the same temperature. Our water goes into the washing machines at 166 degrees, never more and never less.

Mr. Mathews: May I ask how much bleach you make up at a time?

Mr. Goodhart: In our laundry we have a thirty-gallon jar, and we have it hoisted up on top of another thirty-gallon jar, and we have a one-inch hole drilled about two and a half inches from the bottom, with a pipe and valve. We put in ten pounds of chloride of lime and ten pounds of ordinary washing soda in cold water, stir it, the lime making a paste. We allow it to settle and draw off the clear liquor into the lower jar. We keep it covered and in a dry place.

Mr. Lyons: How much do you use with a hundred shirts?

Mr. Goodhart: We load an ordinary No. 35 machine with ninety shirts, and in bleaching we use three inches of water inside the cylinder, and in that we put three quarts of the bleach and let it run twenty minutes.

Mr. Smith: I would like to ask Mr. Goodhart why he gave up bleaching in the suds and uses it after the washing?

Mr. Greene: Mr. Goodhart has just stepped out.

Mr. Comstock: I will attempt to answer why we bleach after the second suds. By using hot water you lose a certain amount of the chlorine; therefore, to bleach the clothes properly we use the bleach in cold water and retain the chlorine gas, getting a better effect.

CHEMISTRY IN THE LAUNDRY.

Why is it not as necessary for a laundryman to know something—yes, a great deal—about chemistry, as he does about other routine affairs of the business? It is just as essential for them as far as it applies to the laundry. A laundryman who makes his own soap and bleach, mixes his blue and starch, cannot do it equally as well as if he were up in chemistry. There are too few laundry students engaged in the business. It requires brains as well as muscle to successfully conduct the washing department of a laundry. The laundry business is not what is was twenty-five years ago, and we doubt if there are a dozen men in it now who were even ten or fifteen years ago, that are up to date in the advance made in the science of good and practical laundering. This may sound strange to some, but it is nevertheless a fact, as can be proven.

* * * *

One of the safest chemicals is ammonia. Two tablespoonfuls will be sufficient to soften four gallons of water. A small amount of washing soda, dissolved first in boiling water and stirred through a tub of cold water, will accomplish the same result, but when soda is used in large quantities it will rot the strongest fabric. Borax, though somewhat more expensive, is a safer article. It seems to have the power of starting the dirt. It is used extensively in Holland and Belgium. In this connection the Boston Cooking School Magazine gives the following directions:

Half a pound of borax is sufficient to soften ten gallons of warm water. It not only saves labor, but it saves soap. Dissolve the borax in the water. If the water is soft, use only half the quantity of borax given. Shake out the soiled garments loosely, rub soap on the specially soiled parts, and immerse them in the borax and water. After stirring them thoroughly let them lie over night. In the morning lift the pieces out one by one and rub them on the board. Throw them into a boiler of cold water, in which a half pound of dissolved soap has been stirred. Let the clothes boil up once in the boiler, then lift them out and rinse them in cold water. Add a teaspoonful of borax to every gallon of water used in the rinsing.—Family Wash.

BLEACHING LINEN.

According to the French patent specifications of E. Tabary, nitrous acid in the nascent state can be employed for linen bleaching. The material is thoroughly steeped in a solution of sodium nitrite, and then entered in a bath of hydrochloric acid. This alternate treatment of the fabric with sodium nitrite and hydrochloric acid is repeated until the desired bleaching effect is produced, the excess of acid being neutralized with soda solution before the linen is re-entered in the nitrite bath. The reddish tinge remaining at the close of the operation can be removed by chlorine bleaching, the fabric being first treated with soda, then with bleach, and finally neutralized.

The above described process is intended to dispense with grass bleaching.—Exchange.

TO WASH AND BLEACH COLORED GOODS.

1. Run on cold water; make a good suds; run 5 minutes; turn on steam gently until water is hot to hand; turn off steam; run 15 minutes longer or 20 minutes in all; run off.

2. Run on hot water, make a good suds; run 20 minutes, then put in the wheel (previously diluted in pail of water) from one to one and a quarter ounce of bleach; run 5 minutes, or 25 minutes in all; run off.

3. Hot water rinse 10 minutes, run off.

4. Cold water rinse 5 minutes; run off.

5. Run on cold water, for bluing; mix and put in the wheel from 2 to 3 ounces of acetic acid; run 4 minutes; blue to desired shade; run 6 minutes longer.

N. B.—Put all flimsy or delicate colored shirtwaists in muslin bag, tie well and put all shirtwaists in second suds. Do not try to build up suds after using bleach.

* * * *

A laundryman who advertises that he does not use acids or chemicals of any kind in his laundry misleads the public. Every man in the business knows that it is utterly impossible to launder dirty clothes without using chemicals or some kind, but the chemicals are not necessarily injurious to the fabrics. Chloride of lime is used to a great extent for bleaching purposes, but should not be used in quantities strong enough to injure cotton or linen cloth. It is perfectly harmless when properly used, and is one of the best known chemicals used in a laundry. It is used in connection with caustic soda for this purpose, and no laundryman can well avoid using both of these chemicals. Caustic soda is used in the making of soap, and what laundry can do without soap?

ACTION OF OXALIC ACID.

Editor National Laundry Journal:

Will you kindly favor me with your opinion as to the action of oxalic acid on cotton and linen white goods. Is its use injurious to the fabric or not? Yours faithfully,

CANADIAN.

So far as our information and experience goes, the action of oxalic acid on linen and cotton white goods has a tendency to destroy. The measure of its injury is in accordance with its strength when using. It seems to be the general opinion among those who use it in the bleaching process, on this class of goods, that any other of the acids that may be used for the same purpose are less harmful, and that, aside from the reason that it is something of a bleaching agent, the main excuse for its use is that it is cheaper than the others.

It is useful in taking out certain stains, being excellent for iron rust stains on white garments; also for ink stains; but if not cautiously used it is harmful to the goods.

THE ELECTRICAL PRODUCTION OF OZONE.

Another forward movement in the progress of electricity into fresh fields is the production and utilization of ozone. Many uses have been suggested for ozonized air. Of these the following have all received experimental trials, with more or less success:

Ageing wood for musical instruments, maturing wines and spirits, sweetening foul beer casks, drying and thickening oils, bleaching waxes and fats, seasoning linoleum, bleaching fabrics and yarns, sterilizing drinking water.

The use of ozone, thus far, however, seems to be interesting from a scientific rather than a commercial standpoint, so far as most of the processes named are concerned, but it is predicted that its employment in the manufacture of oils, fats and organic chemicals will extend rapidly; in other words, that its industrial application will be restricted to those processes or operations for which at present the two sodium salts or atmospheric air are the customary oxidizing agents. As regards cost ozone occupies a fairly favorable position; while its ease of application and non-production of solid or liquid by-products give it a great advantage as compared with the troublesome acid mixtures that have to be handled in the case of sodium bichromate and of sodium manganate.—Modern Machinery.

REMOVING STAINS.

COAT CROCK.

Editor National Laundry Journal:

I send you a pair of cuffs worn by a man formerly of Chicago. I told him we could make them white, but after several attempts had to own that it was too much for our gray matter to solve. Wish you would show them to some experts and get an opinion; then request them to run them through their regular wash. Find out if you can what this gray matter is, and also how to remove it. Malone, N. Y.

* * * *

Editor National Laundry Journal:

I send you a cuff which you will notice is covered on the outside with streaks. For the Lord's sake let me know the cause, how to prevent, and what will remove them. They occur mostly on cuffs, but occasionally on collars. I have exhausted my experience, knowledge and patience, and failed. Yours truly,

Brunswick, Ga. G. W. Cline.

As the two inquiries above are concerning a similar, if not an identical trouble, we will endeavor, in answering the former, to make it cover both.

Our opinion is that the trouble in both cases is from what is by some commonly called "coat crock," and comes from the inch or so of the coat cloth which is turned up inside at the sleeve ends. When the goods are poorly dyed, or dyed with poor material, the trouble follows, and is more extreme when a person is caught out in the rain, as this soaks it into his cuffs. The trouble is particularly noticeable sometimes just after a person has had a coat redyed. The collar sometimes is affected from the coat or vest collar, but the chief location of trouble is in cuffs.

There is a similar trouble in linen worn by those in the hardware business, and caused by a fine black dust of a graphite nature wearing into the goods. This latter is not so obstinate generally, but in the case of the bookkeepers in a hardware store, or those whose employment is of a more cleanly nature than the clerks about the store, the trouble is sometimes very obstinate; quite as much so as the coat stain. The reason why the more cleanly occupation makes the most obstinate case of soilation is that the cuffs are worn longer and the trouble gets more firmly seated. Obstinate cases of either, particularly the coat stain, cannot be taken out except by a pair of scissors.

* * * *

Editor National Laundry Journal:

I have a customer, a banker at that, who, after wearing his cuffs a few times, will get them so begrimed that it is impossible to get the dirt out. He claimed I did not wash his goods, so I put a pair through the washer twelve times in succession, and the dye still remained. He has left me and now wears celluloid cuffs, but I noticed one day last week, while in the bank, even those were "dyed." I finally asked him if he ever had his coat redyed. "Why, certainly I do," he replied. That explained the whole trouble to my satisfaction.

TO REMOVE COAT CROCK.

Editor National Laundry Journal:

As to stains on collars and cuffs originating in coats made of shoddy goods, I believe they can be removed by giving the stains a good bath as follows: To two gallons of hot water and soap add eight ounces of bleach. Leave the goods in this about one-half an hour, then wash them by the usual process. I have been troubled the same way with stains and have found relief nine times out of ten in the above manner of removal.

My bleach is as follows: Ten lbs. chloride of lime, five lbs. caustic soda, to twenty gallons of cold water. Settle twelve hours. I have used this formula about five years with good results. "ERIEITE."

* * * *

SOAKS IN MILK.

Editor National Laundry Journal:

I notice that several laundrymen have made complaints of being troubled with what is known as "Coat Crocks." For the benefit of these gentlemen, as well as all others who may be similarly troubled, I will say that the only remedy I have ever found to overcome this trouble was milk. I place the gray streaked cuffs in a pan of sweet milk and set it in a warm place for 48 hours, or until the milk has thoroughly soured. Nine times out of ten the dye will come out readily. Hoping this may be of some use to my brother laundrymen, I am,

Yours respectfully,
Norwalk, Ohio. FELIX KUGEL.

* * * *

Editor National Laundry Journal:

Yesterday I was introduced to a dyer, and remembering my poor wash brothers, I asked this artist of rainbow colors how he accounted for these black streaks in cuffs and collars. The answer he gave me was as follows:

"If you get your coat dyed see that the dyer, after applying the color, rinses in a number of waters, as this will take all the superfluous dye away; if it is not rinsed enough you will have trouble with crock on your cuffs."

I am, yours,
Manhattan, Kan., May 23. A. WASHER.

HOUSEHOLD RECEIPTS FOR THE REMOVAL OF STAINS FROM LINEN.

It is said by authority in Table Talk that "stains are more readily removed before washing; indeed some cannot be removed at all after being in hot, soapy water." There should be kept on hand a number of bottles containing a solution of oxalic acid, muriatic acid and salts of sorrel, Javalle water, turpentine, benzine and alcohol. As the first four are powerful and extremely poisonous they should be carefully labeled and kept out of the reach of children or careless help. Powdered chalk, flour, starch, buttermilk, molasses and other domestic commodities are usually in the storeroom. Muriatic acid may be had from the druggist and four ounces will be sufficient to last for a long time; it should be kept tightly stoppered and should be labeled as poisonous. Five cents' worth of oxalic acid, procurable at any drug store, may be put into a four-ounce bottle, the bottle filled with water and shaken frequently for a couple of days. If any crystals remain undissolved the bottle may be refilled when emptied, the first quantity of the acid being sufficient for the second solution. For Javelle water put into a large granite saucepan, one pound of washing soda and one quart of boiling water and stir until the soda is dissolved; add one-quarter of a pound of chloride of lime, stir again until dissolved, then cover with an old plate until cold. Strain the clear liquid through cheese cloth, bottle and stopper tightly. The thick sediment may be diluted with cold water and used for cleaning the sink.

The stains to be met with on table linen are usually due to coffee, tea, fruits or wine. Where claret or other wine appears regularly on the dinner table the family and maid should be taught to cover the stain at once with a small spoonful of salt; this will remove the worst part and the remainder may be taken out by placing the stained portion over a bowl and pouring boiling water through it. A similar application of water will remove coffee, tea and most fruit stains. If repeated applications are but partially successful put a few tablespoonfuls of Javelle water in a bowl and dip the stained part of the cloth in it. Turn and press with a spoon, then rinse several times in clear cold water. Obstinate fruit stains have also been removed by rubbing with a little whisky or camphor.

To REMOVE RUST stains from linen, wet and soap the article thoroughly. Over a hot iron lay a wet cloth folded several times, then the soaped cloth or garment. When steaming hot dip the finger in the oxalic acid solution and rub on the spot, which will quickly disappear. Rinse well at once.

INK spots may be removed from linen by rubbing in while wet a little powdered tartaric acid, then rinsing. Another method is to dip the stained part in melted tallow, then wash out the grease and the ink will come out with it.

MILDEWED articles should be wet in soapsuds and spread on the grass in the suds; the spots should be covered with a mixture of soft soap and powdered chalk in equal parts. One day's sun on this mixture will usually remove the stains, if not the articles should be kept in suds over night and the process repeated until successful. Buttermilk used in the same way is often effectual.

BLOOD-STAINED garments should be soaked in cold water to which a little ammonia is added. When this cannot be done a thick paste of starch and cold water should be laid on and left until dry and then brushed off, repeating the process where necessary.

Molasses well rubbed in, or a soaking in sweet milk, usually remove grass stains; alcohol is also good.

SCORCH stains may be taken out by dipping in warm water; then in lemon juice, covering with salt and exposing to the sun's rays. A dipping in soapsuds, followed by bleaching, is also effectual.

Turpentine will remove paint spots from coarse or strong fabrics, but for fine materials benzine or naphtha is better. If a spot on linen resists acids it should be moistened with water and held over the smoke of a sulphur match, then well rinsed.

Stains left by machine oil and grease can be removed by rubbing the spots with a cloth wet with ammonia, then washing with soap and cold water.

To Remove Iron Rust from White or Colored Goods.—Wet well in hot water, then pour on rust spots a few drops of muriatic acid. When spots turn yellow rinse goods at once in hot water. Wash goods out as usual. In all colored goods always test acid on unimportant part of goods first. Be sure to rinse goods well before and after using acid.

To Remove Fresh Oil or Grease from Clean Goods.—Dip affected parts in boiling hot starch, rub out well, then wipe out carefully with clean hot starch, and clean cheese cloth; hang goods up to dry.

MILDEW IN THE LAUNDRY.

Mildew can be bleached out of white goods, but when a colored garment becomes mildewed it is gone. Goods will stand being dampened about forty-eight hours in hot weather, but it is not at all safe to allow them to remain longer. Laundrymen will have noticed when their goods are about to become mildewed by the strong fermenting odor which comes from them just previous to the time of mildew. When they smell sour they should be ironed very quickly, or else hung again in the dry room or washed over. Simply air-drying the goods and redampening them does not stop the growth of mildew.

Goods having started to mildew, should they be air-dried and then redampened, will mildew in the same time as they would have done had they not been dried, deducting the time they were in dry condition. If the goods are hung in the dry room the excessive heat will kill the germs, and then it is safe to redampen them, otherwise it is necessary to rewash the goods. The only effectual way to do away with mildew in white goods is to place them in a lukewarm solution of chlorine, or acetic acid and water, the proportion of two fluid ounces of liquid chlorine, one of acetic acid, and fifteen water. Let them remain in this solution for about twenty-four hours, afterward put them through the regular washing process. Of course, if the garment is very much mildewed, a stronger solution is required. However, a garment can be so greatly mildewed that before it is thoroughly cleansed the acid and bleach will eat away the fiber where the mildew is present, causing numerous small holes to appear in the garment.—London Laundry Journal.

A LAUNDRY BRUSH.

A rather stiff brush (about four and one-half inches long without reckoning the length of the handle) is an admirable adjunct to the laundry outfit. The bands of heavy sheets of wool and heavy seams or bands are much more easily scrubbed clean than rubbed clean on the board. Flannels of pure wool, which are not rubbed, but scrubbed with a brush, using water softened with ammonia or borax, and a white, non-resinous soap, and all finally dried on a wooden frame the size and shape of the garments washed, will not shrink and grow hard. The rubbing of wool flannel on a board causes the ultimate spiral fibres of the wool to become entangled and shrink from this cause. This can not happen when the flannels are scrubbed with a brush, and the dirt is so much easier removed from the interstices of the cloth in this way that the labor of washing is materially lessened. When wool is wet and dried the ultimate spiral fibers draw up unless the cloth or garment is stretched on a board frame so this process can not take place. Hard water and resinous, brown soaps cause flannels to be hard. A brush with a convenient handle will cost about ten cents. The garment to be cleaned may be laid across the rubbing board, and the more soiled portion scrubbed more easily when the brush has a handle.—New York Tribune.

SCIENCE OF THE USE OF BLUING.

Written expressly for the National Laundry Journal.

The same natural principles by the observation of which the artist obtains his exquisite effects include the one by which a laundryman makes a shirt bosom assume a whiteness of snowy purity. All tints are heightened by transmitted light. It is obvious, then, that if a tint be added to a color so delicately that the impression produced by it does not change the original tint essentially, something of the effect produced by the transmission of light will be attained. This perfect blending is what is called by artists "purity of tint." It is seen in nearest perfection everywhere in nature, in the clouds, in water, in flowers, leaves and fruits. An absolute white has a dead, dreary appearance, caused by the utter absence of the effect of transparency. It is, therefore, rarely used in ornamental work unless it be so placed as to be enriched by delicate reflections from adjacent objects. What is generally called a pure white has more or less of a very delicate yellow, green, or blue tint, the absence of which would be very sensibly felt, although its presence as a tint is scarcely perceived. This is the real reason why bluing is used in the starching of linen, though, we venture to say that this reason has rarely been thought of sufficient importance to repay analysis.

TROUBLES IN STARCHING.

YELLOW EDGES AND BLACK SPECKS ON THE SIDE.

Editor National Laundry Journal:

Is powdered alum the proper thing to put in starch to make goods stiff. What, if any, harm will it do the goods?

Is borax a good thing to put in starch?

What is the best article to put in starch to make the work stiff as well as pliable?

We do not seem to get shirts, collars and cuffs stiff enough without using about twice the amount of starch necessary.

Our method of using alum and borax is by mixing one pound of alum to two pounds of borax, one-half pint to three gallons of starch.

Our starch is mixed in warm water, twelve ounces to the gallon; then placed in the starch kettle and boiled from ten to twenty minutes. We do not boil with live steam.

We starch our shirts from the extractor, then dry them, and dampen by means of pieces of dampened muslin, then placing in a press.

Our collars and cuffs are run in a dip wheel for fifteen minutes; then run in the extractor for two or three minutes; starch is then rubbed in them; wiped off thoroughly; dried; dampened by a machine; pressed and ironed. Very respectfully, . SECRETARY.

* * * *

The inquirer, in addition to the above, gives the names of the firms who furnish the starches, but we do not clearly draw from his statement the distinction between wheat and corn starch. We are inclined to believe, however, that he uses two-thirds wheat and one-third corn. If such is the case, greater stiffness may be had by increasing the proportion of corn starch, and the proportions are frequently reversed from those above mentioned, making it two-thirds corn and one-third wheat.

We can not gather from the statement made just why it is thought that twice the amount of starch necessary is used. Twelve ounces to the gallon is certainly not too much strength, nor can too much of such a consistency be gotten into his goods.

There are several other means by which stiffness may be increased, however, one of which is to dry the shirts somewhat before starching; another is to use something for stiffening, for which some use a combination of borax and gum-arabic, and some a combination of glue and glycerine; but many good laundrymen find it unnecessary to use anything of the kind.

We would not decree it either essential or advisable to use alum in starch, although we are without personal experience in such use; as to the harm, if any, in so using it, we think its acidity might be found troublesome in effect on blue.

The yellow edges referred to we think are likely caused by too much dampening; and the same may be the cause of too soft work, when the starching would have otherwise produced sufficient stiffness.

When collars and cuffs are dampened too much, the starch in them is softened up, and under the pressure of the ironing roll it is sometimes forced to one end and to the outside, where it is given a yellowish cast by the heat of the roll.

HE GETS GOOD RESULTS.

Editor National Laundry Journal:

Regarding the above, the undersigned says:

I use a good grade of thin boiling wheat starch. I am in a very heavy salt air climate, have tried several brands of corn starch, one-third, one-half, two-thirds, to wheat, with plenty of gum arabic, and have had to go back to wheat starch, as I find it is the only thing that will hold its own in this climate. I know of several laundrymen who can use corn starch, but they are situated in a dry climate.

I use a good grade of wheat starch, 14 oz. to the gallon, as follows: Two gallons of water, boiling, 2 gallons of cold water; 56 oz. of starch. Maybe I am a little extravagant, but I get good results, and that is what we are all after. I use about one-half ounce of Japan wax to the gallon and nothing else, for, my opinion is, if you buy a good supply you don't need to dress it all up before you use it. As for yellow edges, if the goods are properly bleached and soured they will have none, providing your collars are squeezed out properly, not dampened too much, and ironed by an experienced operator.

H. E. B.

SHIRTS NOT STIFF ENOUGH.

Editor National Laundry Journal:

We presume to place before you a slight trouble we are having with our work. The shirts are not stiff enough.

When taken from the washer, the shirts are hung in the dry room until dry; then starched and rubbed dry on starch tables. The starch is used hot; one part wheat and two parts corn. Borax, wax and acetic acid. Boils from 45 to 60 minutes.

When taken from the dry room they seem to be real stiff. The bosoming ironing machine is well padded with rubber, felt and cotton and is kept as hot as is advisable. J. E. S.

* * * *

We consider that good stiff work can be produced with the material used, and that the trouble is in the handling of the goods. We can scarcely conclude, satisfactorily, from the statement that, after starching, "the goods are rubbed dry on the starch table." It is possible that too much starch is rubbed out of the goods.

There is nothing said as to the consistency of the starch. It may be made weak. It is boiled longer than necessary, and if boiled by steam, with an open pipe, the condensation of steam continually weakens it.

Conceding that the starch and starching are all right for the production of stiff work, that result may be prevented by improper dampening or ironing, or both. What is meant by the machines being "kept as hot as advisable" is a matter of conjecture with us, and only a matter of opinion with the inquirer. It should be as hot as it can be used without scorching. If it is not it is liable to contribute to soft work.

In conclusion we will say that the trouble may be either in the starching, in rubbing too much starch out, in the dampening or ironing, or possibly a little of it in all three; but most, if not all, of it will likely be found in the dampening.

Proper dampening is a matter of knowledge that comes with experience. It is not a matter of a certain amount of water or a certain period of time, but a combination of both. The weight or strength or pressure is an element that contributes likewise, and even the state of the weather does its part. The proper amount of moisture is decided by the pressure in use, and the length of time by both being considered in conjunction with the state of the weather. Goods when taken from the press on a hot, dry day at a certain degree of dampness will be somewhat less damp—the last of them—when they reach the ironing roll than they would on a cool, damp day if taken from the press at the same degrees of dampness.

MIXED QUESTIONS.

Editor National Laundry Journal:

As I am contemplating putting in a power plant I would be pleased to have some information through your columns.

How is the nice, pliable finish obtained? I manage to get out good, clean, white work, with plenty of gloss, but it will not stand to be bent.

Would you give a good method for washing clothes in the cylinder washer by steam? What size washer would be most suitable for a business of from $25 to $35 per week? Would you advise a one or two pocket washer?

Do you recommend starching direct from the rubber wringer without drying in the dry room first?

We use a thin boiling wheat starch, 10 oz., and 4 oz. unchemicaled corn starch to a gallon of water. Boil twenty minutes. Add a piece of spermaceti the size of a plum. The collars and cuffs are put into a pailful of hot starch, left for ten minutes, taken out, straightened and wiped. The shirts are starched by hand; straightened and wiped. After starching, the goods are hung in the dry room until dry, then dampened. The degree of dampness is determined by feeling. COWAN

* * * *

We presume the trouble found in the stiffness is the cracking of turn-down collars and points; but we can see no reason why there should be any such trouble if the starch is made and used as described above, provided that the seams are properly dampened before attempting to turn the goods. As the inquirer is silent on the latter point we think it reasonable to suppose that no such dampening of seams is done, and would recommend it.

The best size washer for the purpose asked is the No. 2, and in this case we think one with two compartments would be found desirable.

We would not recommend starching goods taken direct from rubber wringer, but it can be done satisfactorily where an extractor is used.

COOKING STARCH.

Editor National Laundry Journal:

Can you help us out of a little trouble we have in boiling starch in a "Jacket starch kettle"? We have been boiling our starch with live steam, but thought we would try to make it in a Jacket kettle. After boiling, it thickens and turns yellow and when we add the bluing it becomes green.

We use thin boiling wheat and thin boiling corn, one-third wheat and two-thirds corn. Which do you consider the best way to boil starch, with live steam or not? Respectfully, VAN.

* * * *

Ordinarily starch should not thicken materially after having been boiled to the proper degree, except where it is kept at such a degree of heat as will cause the moisture in it to evaporate more or less rapidly, or it is allowed to get cool. From Van's statement it appears to us that the thickening process mentioned is simply the natural one resulting from after-cooking; or, a cooking by its self-contained heat, after the cooking may have been considered finished and the steam turned off.

We will not attempt to account for the starch turning yellow as it thickens, further than to say that we do not believe the cause of the same is identical with the cause of the thickening.

As to the greenish color shown on introducing the blue, we think that "Van" is using the wrong kind of blue. It probably contains an acid which attacks the elements in the mixture, and no doubt it was not bought from the same supply house as the starch was.

Boiling starch with open steam pipe, and boiling it in a jacketed kettle, both have their adherents. Where condensation in the pipes is well cared for, and other conditions are favorable, we believe the advantages of using the open pipe are the greatest.

PERSEVERANCE WILL PRODUCE THE RESULTS.

Editor National Laundry Journal :

I am having some trouble to get a high polish on shirt bosoms and collars. I am using a thin boiling wheat starch, also paraffine wax, but do not get the desired polish. I have a Little Star ironer and Hand Tyler. Can you inform me what to do, or get, that will bring the high polish desired?

I also have some trouble as to stiffness in collars, although I am very careful to follow all the rules in starching the goods. M. V.

* * * *

Although the writer does not say so, we presume that he is new in the business, and on that presumption would say that time and perseverance will bring what is now most lacking in obtaining a fine, high polish in hand work. He will never be able to determine just where or how he comes by it. What we refer to is the "know how," which comes as above stated. It comes more quietly than quickly, but when once had can never be taken from you, neither can you dispose of it. Each must get it for himself in the same manner.

"M. V." may get his collars stiffer by using one-third corn starch instead of all wheat, and if that mixture does not produce sufficient stiffness he can increase the quantity of corn starch.

STARCH FOR ALL AROUND USE.

We get all kinds of peculiar inquiries from men who are in the laundry business, and they offer some very readable suggestions. Lately we received the following from a subscriber written on a postal card, but whose name we suppress:

———, State of Kansas.

Editor National Laundry Journal:

Will you kindly advise me as to the best starch for "all-around laundry use"? Hoping to hear from you, I am, yours truly, W. M. R.

* * * *

To this we make reply as follows: By all-around purposes is probably meant for use in a small laundry, where it is desirable to make one batch of starch answer for all goods and purposes. In such a laundry there is ordinarily very little more starch work, comparatively speaking, than that of shirts, collars and cuffs; and to serve all purposes a batch of starch ought to be made so as to give the best result in the shirt, collar and cuff work. Whether stiffness or a fine color and flexible finish is the point sought would necessarily govern as to which was the best starch for the purpose, and the inquirer will find these points elaborated on in an article elsewhere.

CHEMICAL ACTION OF STARCH.

Editor National Laundry Journal:

I would like to ask through your paper which of the two starches, wheat or corn, has the most chemical action on colored goods. R. J.

In reply to this we would say that chemical action in colored goods, by the use of either wheat or corn starch, would be due to chemical strength infused or developed during the process of manufacture, and that such strength may be in either to a greater or less degree. Consequently we believe you may at one time find more in corn starch, and at another time find more in wheat starch; but among the best grades can be found such as are warranted to be free.

HERE ARE THREE QUESTIONS.

Editor National Laundry Journal:

Will some laundrymen who have had experience in doing a high grade domestic work give me their formula for making starch for this kind of work? Also what will prevent the edges from splitting or cracking on standing collars and cuffs? What preparation is the best for dampening the seams of turn-down collars? Yours truly,

INFORMATION.

In answer to the first question, asking for "a formula for making starch for domestic work, we refer the inquirer to pages ——— and also to the book "The Steam Laundry and Its Methods," pages 39 to 41. That book is furnished free as a premium with subscriptions by the NATIONAL LAUNDRY JOURNAL.

Regarding the second question, "What will prevent the edges from splitting or cracking on standing collars and cuffs?" we will say that the trouble in question is taken by us to be the rough edge, though the meaning of the inquirer is not entirely clear. Such being his meaning, we will say the edge is made rough by wear, and the roughness is more prominently brought out by the pressure of the ironing machine.

The wear may be more or less owing to the treatment received at the hands of the laundryman, and the prominence in which it is brought or forced out is likewise due to the pressure of his ironing machine or the hardness of the padded roll or bed. All of these can be moderated some, but with the most careful handling time will produce the rough edge.

All laundries, large and small, should be provided with one of the recently invented machines for smoothing these rough edges. These machines are not expensive, some of them being retailed below ten dollars.

To the third question, "What preparation is the best for dampening the seams of turn-down collars?" we will say a little glycerine with water, used hot, is a simple and very effective one.

CAPACITY OF MACHINE VS. HAND WORK.

Editor National Laundry Journal:

I notice advertised in your JOURNAL a machine for starching collars and cuffs, for which it is claimed that with one operator 10,000 pieces can be starched in a day. This I suppose is a ten-hour day. Does this include straightening before going into machine, putting on hooks or hanging in dry room? The reason I asked is I timed a lot from dip wheel, including time in putting in and taking out, and it took one of our ordinary fast starchers one hour to straighten, wipe and hang up 260 pieces. It also took the operator on a one-roll machine one hour to iron them. The operators in both cases think they are faster than the majority of hands. Let us have the results from some one else. REMARK.

* * * *

Editor National Laundry Journal:

On a starcher, with three hands, I starched 1,520 pieces in two hours and thirty minutes, which includes straightening out and hanging in the dry room. With the same hands I dipped and starched 105 shirts in one hour and forty-five minutes. STARCHER.

HOW HE DID IT.

Editor National Laundry Journal:

In order to test how fast my starchers worked, I put one girl on same. The following is her report:

Commenced shirts at 13 minutes after 11 o'clock and finished at 12 o'clock and took 5 minutes to hang up. Shirts numbered 42.

Commenced collars at 12:45 and finished and hung in dry room at 1:12. Number of collars and cuffs, 187.

Yours truly, REMARK.

HOW HE MIXES HIS STARCH AND PREVENTS BLISTERS.

Editor National Laundry Journal:

I think that the laundryman who is having "trouble with blisters" gets his goods too damp; and the reason that they blister mostly on the left side of the bosom is because the roll of his ironer is not as hot on the left side as it is on the right, consequently it does not dry out the bosom as quickly on the left side, thus leaving a blister.

He does not say how he makes his starch. It may be that that is where he is at fault. I will give him my formula, one I have used for years and have never had any trouble with blisters. I prepare the starch as follows: Into a five-gallon kettle I put three gallons of soft water, then two tablespoonfuls of lard; weigh out two pounds of wheat starch, and three ounces of borax and alum mixed half and half, dissolve in one gallon of water; start the water to boiling in the kettle; put in the starch; boil fifteen minutes; then add two pounds of corn starch dissolved in one gallon of water; boil ten minutes longer; strain and blue. I run my goods in 100-shirt lots, and make this batch of starch do all the work; that is, I make four pounds of starch do for every 100 shirts, collars and cuffs, and all thin goods, such as bodies of shirtwaists, aprons, etc. I starch the shirts first, then strain and blue the starch again, adding one quart of water. Now the starch is ready for the collars and cuffs which I starch in a dip wheel, running thirty minutes, and after they are wiped off there is enough starch left to do the thin starching. If he will try this formula and see to it that he does not get his goods too damp, I think that he will have no more trouble with "blisters."

Huron, S. D. J. H. F.

FOR STIFF COLLAR WORK.

Editor National Laundry Journal:

To make collars and cuffs stiff, cook your wheat starch thirty minutes, adding one-third corn, which is done after the wheat has cooked twenty-five minutes, allowing the whole to then cook five minutes, adding a small piece of wax to prevent sticking; work hot. Be sure no chemical is left in the linen to kill the strength of the starch, and see that the washman gets the collars and cuffs put in the extractor straight, not across. Allow the extractor to run at the speed of 2,000 per minute (this is pretty fast); run then in collar and cuff barrel, thirty minutes; dry as quickly as possible. The dampening must be looked after carefully to have an even dampness. If the machine is not hot enough it will iron the starch out of the goods, and a stiffness will be difficult to obtain. Respectfully,

Columbia, S. C. J. E. Dayberry.

THEY WANT STIFF WORK IN DRESDEN.

In the city of Dresden, Germany, is located what is known as "Schreiber's Amerik Dampf Wascherei und Kuntsplatt-Anstalt," which, translated into English, means "American Steam Laundry and Carpet Cleaning." In a recent letter received from there was the following, which may prove interesting reading:

"Your journal, which arrives promptly, always gives us valuable information, and we see subjects discussed which enlighten us on very many points. However, there is one point which we are unable to solve, hence we seek your or our American brethren's aid.

"We have always found that nothing suits the people in this city better than to get stiff work; the stiffer the better. We use the same system in starching collars and cuffs we learned in Chicago and New York. We buy the very best wheat starch obtainable in this country, and add some borax and wax to give it a nice finish. However, our collars and cuffs, while flexible, are not as our customers like them.

"The people in this city care nothing for finish or color, but all they want is to get their collars and cuffs stiff."

[If stiffness is desired, regardless of color, finish or flexibility, corn starch would answer better than wheat, and is cheaper in first cost. Goods will be stiffer if thoroughly dried before starching. However, it seems to be to the interest of the trade to encourage a taste for flexible, pliable work, as much thinner starch can be used, and the time and expense of drying the goods before starching can be saved.

It is some years since stiff work was generally demanded in this country, the tendency having been steadily toward flexible work, fine color and finish, and is now tending gradually toward the dull, domestic, or dead finish.

This tendency calls for more study and skill on the part of the laundryman, and incites ambition to excel. One who is successful in attaining superiority therein is not only successful in gratifying that ambition but is at an advantage over competition. Therefore we would advocate the continual preaching of this doctrine to the patrons of not only laundries in this country but in Dresden as well. Show the people that they are making a mistake by wearing stiff shirts, collars and cuffs, and they will soon drop it for the more pliable work.]

* * * *

To do Up Red, Black or Blue Goods in Solid Colors.—Make a good glue; 12 oz. dark glue to 1 quart water (boil); dip goods in warm glue; rub well on uncovered table; wipe off carefully with black cheesecloth or calico; hang up to dry, clear of any white goods. When dry, dampen down in black calico, not too damp. Cover ironing surface with black calico, iron with moderately hot iron. For waist bodies thin glue with warm water. Glue may be kept for future use.

* * * *

Only the thinnest starch should be used for the fine ginghams and fancy cottons so popular this summer. Their beauty depends on their soft finish and that is lost when they hang in stiffly starched folds.

SCIENTIFIC STARCHING METHODS.

A STRONG PLEA IN FAVOR OF MACHINE STARCHING, AND INTENDED AS ADVICE TO FOREIGN LAUNDRYMEN—THE KINDS OF STARCH USED AND FORMULAS GIVEN.

Presuming on a relationship which I am proud of, I approach the subject of my present writing by frankly telling our British friends that their methods of starching are not in keeping with the prescient and progressive spirit generally displayed in business matters by their race, to which a majority of the steam laundry proprietors of the world belong; and I would like to have the opinions of our relatives in regard to the American system of starching as candidly expressed.

While condemning what I have seen and know to be amiss in this manner of doing the work, I offer a remedy that needs only to be better known in British and other European laundries to be appreciated to the fullest extent.

BRITISH, MONGOLIAN AND AMERICAN METHODS.

In the writer's meanderings to and fro over the face of the earth he has had some experience with three different methods of starching shirts and collars; the first was a British method; the second probably had a Mongolian origin; the third, the latest, and the best, was American.

Thirty years ago British laundries, whether steam or hand, used cooked starch and ironed the goods wet. A little later raw or cold-water starching was introduced into Britain from America and was at once adopted as an improvement on the older system. The starching methods in vogue in most British and other European laundries are the same as those practiced by the almond-eyed orientals in this country. Of course we are aware that there are British laundries where American methods have been adopted, but the number of them is limited.

The American system, which is destined eventually to be the European method also, is simply an improvement on the style of starching in vogue in the bleachfields and laundries of Great Britain from a period previous to 1860, up to 1879. The transition from manual to mechanical means of rubbing in the starch, and the drying of the articles before being ironed, making all the difference in the two methods. These improvements have revolutionized the laundry business in this country.

I fully realize and sympathize with the sentiment that is uppermost in every British heart—the love of home and country, and everything pertaining thereto, down even to a starching method or machine; but I am cosmopolite enough to know that sentiment sometimes blinds people to their own interest. American starching machinery and methods have been before the British public for a number of years, and although the great advantages to be derived from the adoption of these has been recognized and admitted by many prominent European laundrymen, American machinery has but slowly, though surely, been carving a niche for itself in their esteem. The majority of European steam laundries are still working away by the old-fashioned methods, and with out-of-date appliances.

The modern American method of starching is an art that must be learned, and in which proficiency can only be acquired by practice. Experienced starchroom operatives are entitled to be classed as skilled artisans; their acquirements being a practical knowledge of how to mix and cook starch, starch the goods, mold them into perfect form, and clear the fabric of all superfluous starch. An apt American girl will learn to starch a shirt or collar with a week's practice, and become sufficiently adept in the whole routine of the starchroom to turn out perfect work in a month or six weeks, and I know that the English or Irish girl is not a whit behind her American cousin in aptitude.

I do not claim that the American method of starching is quicker than the British, but do claim that the method, while yielding far better results as to quality, reduces the cost of ironing a shirt, collar or other article, whether by machine or hand, from 50 to 75 per cent, and this I propose to show conclusively when I come to the consideration of ironing methods, which will be the topic of my next article.

It was in Troy, N. Y., over a score of years ago that a laundryman made some experiments in shirt and collar starching which ended in the discovering and perfecting of the improvements alluded to, viz., starching the goods while wet, drying the starch into them, and then dampening for ironing. He made an effort to obtain a patent for his process, but not succeeding, gave his secret to the trade. The improvement over the old methods of starching the goods either with cooked or uncooked starch was so marked that very soon the new method became the only method of starching in American steam laundries, and it has remained so ever since.

FACTS AND FIGURES.

I will present some facts and figures in regard to time and cost of starching by our system, and the saving effected in the ironing process by starching and drying the goods accordingly. A comparison of these with results obtained in British laundries by the antiquated systems practiced to a large extent there should have the effect of making the European laundryman put on his thinking cap, get a few American machines, and experiment a little on his own behalf.

STARCHROOM EQUIPMENT.

The ordinary starchroom outfit consists of one collar and one or more shirt starching machines, dry room, table, jacket kettle, and rinsing tub with wringer.

The goods are taken from the extractor to the starch table, where they are looked over for stains, etc., and then starched; the shirts and waists by machine, ladies' clothes and fancy articles by hand. The collars and cuffs are generally wrung out separately and then starched in dip wheel or machine. Uniform results are thereby obtainable at all times in stiff or medium finish, while hand work varies to a very considerable extent in respect to the quality of starching turned out. The machine also presents these advantages over hand starchers: The starch can be kept and used very hot; one operator will do the work of two and do it better; the laundry proprietor is not so much dependent on erratic employes.

I have occasionally seen two girls starch by machine, wipe off and hang up 100 shirts an hour, 600 shirts being considered an average day's work for two girls. A man or woman doing the starching by hand will average twenty-five to thirty shirts per hour; the best grade of work being referred to in each instance.

Collars and cuffs starched in dip wheel are stripped and wiped off by a girl at the rate of ten to fifteen dozen per hour, that quantity being easily doubled for each girl employed where a collar and cuff starching machine is used.

STARCHING NEW WORK.

New shirts are body starched in the washing machine either while bluing or afterward. A load equal to the capacity of the machine is starched at a time. Where a large trade is done in laundering new shirts a washing machine kept for the purpose of body starching will effect a considerable saving in starch, as by adding some fresh starch from time to time the liquor can be used up.

When the water is extracted from the shirts before being body starched the goods will take up more of the starch, and a light or heavy body can be imparted to the fabric according to consistency of the liquid used. Machine body starching gives uniform results in color. New collars and cuffs are starched same as custom work.

STARCHROOM SUPPLIES.

Wheat, corn, rice, and occasionally farina, starch are used in American laundries, wheat starch being the favorite, while in some laundries all corn starch is used on shirts. The latter is very economical, and first-class work can be turned out with it. Other laundries use a combination of wheat and corn, rice and wheat, or corn and rice. Collars and cuffs are, as a rule, starched with mixed starch.

The various starches in different proportions give a variety of finish from the very stiff and heavy to the light elastic, so that any starch may be used by American methods, provided it is of good quality.

To British laundrymen who decide on giving American methods a trial I would recommend a starch liquid made from equal proportions of wheat and corn starch for shirts and ladies' wear, while for collars and cuffs four-fifths wheat to one-fifth corn will be found to give a finish that can not be surpassed. Chemicaled or thin boiling starch has largely taken the place of the pure article in American starchrooms, as it is easy to work, penetrates the fiber quickly and thoroughly; permanent stiffness or flexibility, as desired, being easily obtainable with it.

BORAX.

This laundry requisite, and its merits as an ingredient in starch, are well known to British laundrymen. American powdered borax gives color, tone and a lasting stiffness to starched work that are everywhere considered highly desirable. Powdered borax and alum, in equal proportions, are used to chemicalize pure starch and make it cook thin, and the finish obtained with starch treated in this way is surpassingly white and clear.

WAX.

Spermaceti, Japan, paraffine and white beeswax are used as lubricants in cooked starch. A small quantity of one of these dissolved in the liquid starch serves to lubricate the surface over which the hot roll of the ironing machine or the flatiron is to pass. When wax is used, a smoother finish and higher gloss can be got than is obtained with starch alone; some laundries, however, use the pure starch.

GUM ARABIC.

This is used to obtain a hard or board finish. The gum is put into a vessel containing water, reduced to liquid form by boiling, then strained, and a small quantity added to the starch while cooking. The gum has also a tendency to increase the gloss; it is only used where there is a demand for exceedingly stiff and glossy work.

BLUE.

If the goods are properly blued in washing machine, no bluing is required in the starch, as better results can be obtained with white starch. When it is considered desirable to blue the starch, aniline bluing is used.

SOME AMERICAN METHODS OF PREPARING STARCH.

Ten ounces pure wheat starch, one-third ounce Japan wax, one gallon water. This gives a flexible, light and durable finish.

Nine ounces pure corn or rice starch, three-fourths ounce spermaceti, one gallon water, gives body and stiffness.

Fourteen ounces thin boiling wheat starch, one-half ounce Japan or white wax, one gallon water, gives medium flexible finish.

Ten ounces thin boiling corn starch, three-fourths ounce wax, one gallon water, gives stiff, heavy and pliable work.

BORAX STARCH.

Seven ounces pure wheat starch, two ounces pure corn starch, one and one-half ounces powdered borax, one ounce alum, one-half ounce Japan wax, one gallon water.

Eight ounces pure corn starch, one ounce powdered borax, one ounce alum, one-half ounce wax, one gallon water.

Ten ounces rice starch, one ounce borax, one ounce alum, one-half ounce paraffine wax, one gallon water.

Borax starch gives a surpassingly clear and brilliant tone to both white and colored goods, a more or less elastic finish, and any desired stiffness is obtained by adding to or reducing the quantity of starch.

Directions for cooking one gallon liquid starch: Dissolve the starch in one quart cold water; put three quarts water into the starch kettle, add the wax and bring to a boil; then stir the starch into the boiling water. Dissolve borax and alum with the starch in cold water. Wheat starch should be boiled slowly for twenty to thirty minutes; corn and rice starch ten to fifteen minutes.

Three to four pounds of starch, according to stiffness required, will make liquid starch for 100 shirts.

Three pounds starch will give a good, stiff finish to a load of 400 to 500 collars and cuffs.

Shirts, collars, cuffs, and ladies' clothes are thoroughly wrung in an extractor running at a speed of 1,500 to 1,800 revolutions a minute before being starched.

By the English method of starching, a hand ironer will average four shirts per hour; by the American system shirts are ironed by machines at an average of sixteen per hour for each girl employed on the work, while hand ironers average seven shirts per hour, finishing the goods ready for packing in both instances, and I have had girls who averaged ten shirts per hour by hand with the assistance of an apprentice, while the disparity in the output of collars and cuffs, starched by the respective methods under discussion, whether ironed by hand or machine, is vastly greater. EXPERT.

TROUBLE IN GETTING STIFFNESS, SMOOTHNESS AND GLOSS—ALSO WITH BLISTERS.

Editor National Laundry Journal:

We are turning out nice white work, but think the trouble must be in starching. We have tried all kinds of ways. Our work is not as stiff as it ought to be; does not have a high gloss, and is not smooth. Also have trouble with collars and cuffs blistering. We are using thin boiling corn and a wheat starch, using one-half pound of each to a gallon. Have tried cooking it for a few minutes; also one hour; used a tablespoonful of lard to the gallon; also kerosene and Japan wax. We use a steam cooker turning live steam into the starch. Anything that you can suggest will be tried with a vim. Yours very truly, B. & C.

* * * *

We can not say what there may be lacking in the method of using the starch, as the complainants are silent on that point. The stiffness may be increased by increasing the proportion of corn to wheat. Then again, the good results that ought to be had from a proper consistency of starch, properly put into the goods, may be spoiled in a measure by improper dampening and ironing. In the same fault is often found the cause of collars and cuffs blistering, and as this latter is one of the troubles enumerated by the complainants it would seem to us that there is likely a faultiness in their dampening, and would recommend attention to that portion of the work.

To properly dampen goods one must have had considerable actual experience; and the most experienced and successful person would be unable to impart to another the secret of his success, and have that other one produce the same results, or results at all like his own; unless it be that the one to whom instruction is given has himself had somewhat extensive experience at the work.

The important point to know is, when the goods are at the proper degree of dampness; and beyond this the dampening should not go. That is to say, they should be dampened with full sufficiency and without excess. When they are at the proper stage of dampness they should be ironed as soon and as quickly as possible, and in the interim should be kept at the same degree of dampness, not being allowed to either dry out or absorb any more dampness.

There is no positive rule that can be given by which the proper degree of moisture may be measured or determined, either by the quantity of moisture used or by the measure of time the goods are allowed to lie. Surrounding conditions contribute to hasten or to hold the process, such as the degree of dampness, as well as the temperature of the weather or the room; but the experienced one, making allowance for these circumstances, will be able to open his dampening goods at about the right moment, nine times out of ten, much the same as a baker can determine about the moment at which his bread will have been sufficiently baked, though were you to measure the time that the baker will have left his different lots of bread in the oven you would probably find that few lots remained in the oven exactly the same length of time, yet they had apparently received the same amount of baking.

The distinction made between ironing soon and ironing quickly is, that by ironing soon we mean that the ironing should be begun at once, and by ironing quickly, we mean that the iron or roll should be as hot as it can be used without scorching, and used quickly or by rapid strokes, if an iron; or if a roll, it should run fast, so as to allow of a higher degree of heat.

The ironing process, as well as the dampening, contributes its share to the development of the results of good starching. With both well done, all of the troubles here mentioned may be avoided if the starching has been well done, and may be improved on even if the starching has not been done quite as well as it should have been. They should improve the gloss, increase the stiffness, leave a finer, firmer and smoother finish and prevent blisters.

To sum up, we believe that the trouble is not in the starch, and probably not in the starching process at all. We recommend looking for it in the dampening and ironing. If it can not be found there, we would recommend using an ounce of powdered borax to a gallon of starch, and if still further stiffness is desired, an ounce of gum arabic may be added. Drying the shirts before starching will also contribute to stiffness.

The borax will tend to increase the stiffness as well as give tone and color. The gum arabic will give a harder finish as well as tend to increase the gloss.

Years of experience, however, will likely show that all the points shown above as desirable to reach or avoid, can be accomplished without the use of much or perhaps any of the supplementary ingredients either now being used by B. & C. or here recommended.

FIRES IN HOSPITAL LAUNDRY DRY ROOMS.

A recent number of the *American Journal of Insanity* contains the following, contributed by the Hudson River State Hospital, at Poughkeepsie, N. Y.:

"The frequent occurrence of fire in connection with hospital laundries and the experience with two which originated in the laundry of this hospital within a year have led to an investigation of their causes and an inquiry as to the best means of overcoming or minimizing the dangers therefrom.

"An examination of the records of hospital fires shows that by far the greater number, especially those which have occurred in the night, have arisen in connection with the laundry dryrooms and it is that part of a hospital plant which needs the most complete care and equipment for preventing and fighting fire.

"Less than a year ago we were startled one morning at about half-past four by the alarm of fire. An investigation showed that it was confined to one of the sections of the metal (and fireproof) dry-room and had undoubtedly originated by the clothing coming in contact with the steam pipes, which were heated under high pressure during the day, but were supposed to carry only a small amount of steam during the night.

It had been the practice of the laundryman to load up the drying chambers with as much clothing as they would hold at about five o'clock in the afternoon, to then turn the steam almost entirely off and leave the clothing to dry during the night under a small amount of heat. Correspondence with the several superintendents in this state shows that this is the general practice. Thinking that the danger could be entirely overcome by directing the night watchman to draw out the racks upon which the clothing is hung and to turn off the steam completely between 8 and 9 o'clock in the evening, we rested secure in the belief that another fire could not occur in the same manner. That this belief was not well founded was proved in less than a year by an exactly similar occurrence.

"At 2 o'clock on the morning of February 9 we were again aroused by the alarm of fire and found that the clothing in one of the dry-room sections had again become ignited, despite the precautions which had been taken to prevent such an accident. Some useful lessons were learned, which, it is hoped, may be of sufficient value to record in the columns of the summary:

"First—After each fire a dead cat was found in the debris. At first this was considered merely a coincidence and nothing specially was thought of it. When, however, the second was found, it became evident that the cats had made their way into the drying sections where some of the bars had been drawn out a little, and in their efforts to get out had probably pulled the clothing down on the hot pipes, thus causing the fire. This would indicate the necessity for a wire guard above the pipes such as some manufacturers use, and would also suggest the thought that cats may become a source of danger as well as a nuisance about a hospital.

"Second—The intense heat caused by the burning clothing, which was confined within the heating chambers, caused such an expansion of metal that it was impossible to pull out the racks. In fact, in the second fire it was necessary to break a hole through the metal for the introduction of the hose nozzle. The difficulty suggests the advisability of having the hot chambers supplied with a water pipe which either could be perforated throughout its length or equipped with a spray nozzle. With a valve in the washroom, at a safe distance from the dry-room, where the water could be turned on by the discoverer of the fire without pulling out the bars, the fire could, in all probability, be smothered without the help of the fire brigade. [We think steam would be more effective in a tightly closed dry-room.—Ed.] Automatic sprinklers in the ironing and dry-rooms would also greatly lessen the danger. There should also be at hand a number of chemical extinguishers.

"Third—Dry-houses should be so constructed that the floor can be readily cleaned underneath the pipes. Particles of lint are constantly dropping from the clothing and settling upon the pipes and floor, and this deposit, on account of its inflammability, becomes a source of great danger. It is, therefore, of the utmost importance that the floor be frequently cleaned, and this is much more apt to be done if the construction is such that it can be done with little trouble.

"Fourth—When the laundry is not entirely disconnected from the wards, fireproof doors should be provided at the points of communication.

"Fifth—The night watchman should, of course, make regular visits to the different parts of the laundry, and such visits should be registered by some satisfactory device such as the electric clock.

"Sixth—The last fire occurred upon a very cold night and it was found that the hydrant just outside the building was frozen and the water had to be carried from a more distant hydrant which was more protected. This would suggest the advisability of having a standpipe or hydrant in the washroom, where freezing would be impossible.

"It is our present practice to have the dry-house filled up just before quitting time, and after supper, between 7 and 8 o'clock, when the clothing has had time to dry, the assistant laundryman, who lives in the institution, with the help of the patients completely empties the drying chambers and draws the bars out at full length. The night watchman visits the laundry at between 8 and 9 to see if this has been done. He, of course, also makes his regular visits through the night, which are registered by an electric clock."

THE PHILOSOPHY OF DRYING GOODS IN WARM ROOMS.

(Written expressly for the National Laundry Journal.)

Although water possesses a specific gravity 815 times greater than that of air, yet it can rise into the air as into a vacuum and mingle with it by the same laws by which gases diffuse through each other. It is this property of water that enables us to have clean and dry linen, for if it were otherwise, i. e., if the water was the same as oil, our wet clothes would have to be burned in the fire before we could expel the moisture from them. Were it not for this property of water, the calico printers and woollen dryers could never dry their pieces in either shade or sunshine. When wet goods of any kind are submitted to heat in a room, they soon become dry, because the air receives the moisture and retains it in its soft embrace, thus enabling us to obtain dry clothing by the property of evaporation which belongs to water and the law of gaseous absorption which reigns among the gases.

A curious property of the evaporation of water is that the quantity which will rise in a confined space is the same, whether the space be a vacuum or already filled with air; hence it is only necessary to know what quantity of vapor rises into a vacuum at any particular temperature to know what quantity will rise into the air. Thus the vapor of water which arises into a vacuum at the temperature of 80 degrees depresses the mercurial column one inch; its tension is one-thirtieth the usual tension of air. If water at 80 degrees be admitted into dry air it will increase the tension of that air one-thirtieth if the air is confined, or else increase its bulk one-thirtieth if the air is allowed to expand. A certain fixed quantity of the vapor of water, therefore, can only rise into a certain fixed quantity of air, hence the air of rooms employed for drying goods may become so saturated with moisture that the fuel may be expended foolishly in trying to expel the moisture from the goods when it is impossible for the air to take it up, and hence the evaporation of the water is greatly facilitated by a moving current of air.

It has been proposed more than once to employ hot air in raising steam, under the mistaken idea that more steam could be generated with less fuel by the passing of such a rarified hot body through water. But in evaporating water by heated air—the way wet goods are dried—the vapor itself carries off exactly the same quantity of heat as if it were produced by boiling the water at 212 degrees, while the air associated with it requires also to have its temperature raised, thus requiring more fuel. Hence, water can never be evaporated in a drying room with so small an expenditure of fuel as steam can be generated in a close boiler.

HOW DOES STEAM IGNITE WOODWORK?

Editor National Laundry Journal:

Will you kindly give me instances where a fire was ignited from steam coil in a dry house, or a fire started in any way in a steam dry house, and greatly oblige, yours very truly, L. J. RUMFORD.

* * * *

We can recall no case where the evidence was conclusive that fire started from a steam coil in a laundry dry-room, or the particulars as to the cause of any fire that started in a drying room, for the reason that where fires have started in dry-rooms their progress has been so rapid that it has destroyed the evidence of the origin. We know of several cases in which fire started in the dry-room beyond a doubt, and there is but little question in our mind but there are many such cases. As to the possibility of woodwork being ignited from a steam pipe, there have been many cases to prove the possibility. One of these cases related to us was where a steam pipe passed through a wooden box, from one building to another, underground, and when occasion was had to open the box for repair or alteration the box was found to be almost entirely consumed by fire, very little but ashes being found.

ABOUT DRY ROOM FIRES.

Editor National Laundry Journal:

An answer in regard to fire in dry-rooms says "Yes, steam pipes will cause fire," and gives an illustration by box underground, etc.

I claim dust will cause fire, by spontaneous combustion, when allowed to gather in or about the dry-room, but that fire can not be started by a steam pipe being in contact with wood or shavings.

My father owned a stave and heading plant and a sawmill, and from the boiler to the boxes in which the bolts were steamed for twelve hours before cutting was a three-inch pipe which was on top of the ground and ran for twenty feet through planer shavings. The shavings next the pipe would turn brown, but never burn. At least they did not the fifteen years that father had the plant, and the boiler pressure was 130 pounds. Yours very truly,

F. N. ROGERS.

OZONIZED LINEN.

An enterprising Parisian laundry company bleaches linen by balloon. A few hundred feet up the air is nearly as pure as in the open country, and it is in this ozonized air that the linen is dried by the aid of a captive balloon. The linen is attached to bamboo frames, and being rough-dried while taking its aerial voyage, a considerable quantity is taken at each ascension. There are about six ascents during the day, and an extra charge of from five to fifty centimes is made for each article thus treated.—Exchange.

POINTS ON SHIRT IRONING.

Editor National Laundry Journal:

It is thought by many that perfect work can be obtained in ironing shirts entirely by the use of machines. We have never seen work that was satisfactory that had been entirely ironed by machines, and have noticed those claiming to accomplish this did not have a very high standard of laundry work. It is quite impossible to pass a shirt through many hands without its being soiled or "mussed."

We think the best way to accomplish good results is to have an ironing table with a regular bosom-board, such as is used in hand ironing, and this table standing in a line with machines, and, after the bosom, inside yokes, neckband and wristbands are ironed, the shirt should be drawn over the bosom-board, clamped in position, the bosom stretched down, a ring put in the neck, the shirt bosom slightly dampened and ironed over with a smooth hot flatiron. Also iron and finish around the neckband, raising the plaits and ironing under, and any dirt or surplus starch or anything else sponged off.

This process will add greatly to the quality of the work and give it the character of hand ironing, and if one should attempt to launder shirts by machines without perfecting some such arrangement the shirts will be out of shape, broken more or less in the bosoms, around the neckband, and there will be no character about them. This method is most useful in ironing "open-fronts," and in order to get the best results in this kind of shirts they should be ironed on the bosom ironer, having the neckband and yoke clamped.

In order to get shape and have the shirt fit the wearer as intended, it is always necessary to stretch the outside binding of the bosom over that part of the bosom where it joins the yoke; stretch up well toward the top of the bosom-board and have the yoke square across the board, and when the shirt is in its position it should be clamped on the yoke and neckband, then when it is ironed it will be possible to button the neckband and have the bosom lie flat. Shirts ironed thus, and stretched on the bosom-board as above described, will have no "chicken breast," and the man who wears them will bless the day that he patronized your laundry.

Shirts should be folded close on the line of the bosom, creased with a hot iron, pressed down as compact as possible, and should be pinned or have bands put on them as soon as folded. There is nothing in the whole laundry that will so greatly improve the appearance of the work with but the slightest expense. It is the finishing of the whole laundry process and should be done most tastefully and with the greatest amount of care.

DON'T BELIEVE IT CAN BE DONE.

Editor National Laundry Journal:

Will "Expert" please inform me: Which is the proper way to set up a neckband—custom work? At right angles with the shirt, as is done for stock work, or at an angle of about 75 degrees? How much longer will a neckband last if set up at right angles than one set up at 75 degrees? Are there any machines that will set up a stock neckband and will not stretch or cut the same—if done repeatedly?

He speaks of doing 60 shirt bosoms an hour. Does he mean the regular run as they come into a laundry, open front, coffin front, plaited bosom, open back and front, or only coffin bosom? Does the operator have some one open up the shirts, or does she pick up and open each shirt herself? I have an old machine that I can do that many of coffin fronts on, but not the miscellaneous kind that come through. I have had operators that dampened, ironed bosoms, neckband and wristbands on 200 shirts a day, commencing at 8:30 a. m. and finishing at 5 p. m., yet could not do 600 in ten hours, nor do I believe any machine or operator can do that many of the miscellaneous kind. SKEPTICAL.

HOW TO SET UP NECKBANDS.

Editor National Laundry Journal:

Replying to "Skeptical's" communication, I would say that a neckband should stand up at a right angle with the bosom of a shirt when folded, as, if properly set up in that form, it will fit itself to the neck of the normally built biped much better than if set up at any other angle, for the reason that the body and neckband both conform to the curves and angles of the wearer's body and neck when put on, with which end in view the ordinary shirt is designed.

The neckband designed and cut to be set up at a right angle with the bosom when the latter is in a horizontal position must be stretched or deformed in some way to get a different angle, and doubtless if the bands set up at the 75-degree angle were examined with the aid of a weaver's glass evidence would be forthcoming that such is the case.

No neckband ironing machine that the writer has any practical knowledge of will stretch or cut the material, unless through improper handling or carelessness on the part of the operator. When the machine is properly adjusted, the roll sufficiently padded, the padding frequently renewed to prevent it getting hard, and every part of the neckband is uniformly moist when brought in contact with the iron and pressure is applied, no injury can result.

It is a common practice in some custom laundries to let the shirts lie after the bosoms have been ironed till the neckbands are dried out before ironing the latter, when a wet rag is brought into requisition and a spot here and there dampened, which is all that saves the shirt from decapitation. Another cause of cutting is the carelessness of the operator on the bosom ironing machine, in ironing parts of the neckband, rendering it hard, brittle and difficult to set up on the band ironer without cracking and cutting it.

Ironing a band between two rigid, or nearly rigid, surfaces will cut the material at the folds around the outer edges.

It is running the neckband through dry the first time that does the cutting, or ironing the band at an angle of 75 degrees or less, and then trying to set it up on the machine when dry. These points being attended to, a neckband may be run through the machine a score of times in succession without showing a semblance of damage.

By keeping band and bosom at right angles from start to finish when ironing the outside and taking care that the band is not dried out in ironing the inside, bands made from the cheapest and flimsiest material can be ironed not only repeatedly, but until worn out, the first signs of which should appear at the buttonholes.

"Skeptical" asks: "How much longer will a neckband last if set up at right angles than one set up at 75 degrees?" Which language implies that the band that can stand up straight will last longer than the other. The rectangular neckband will last longest. The question as to how much longer it will last is a poser, an answer to which I propose to postpone indefinitely.

In regard to bosom ironing I would just say that "Skeptical's" own figures bring him very near the sixty-bosoms-an-hour mark which he does not believe possible. The operator who could iron 200 shirts of a miscellaneous description in seven hours, or from 8:30 a. m. to 5:30 p. m., deducting the noon hour and allowing one-half an hour for dampening, ironing bosoms, neck and wristbands, and this on an old machine, would not have to exert himself to iron 400 bosoms of assorted varieties in the same time and with a new machine having all the latest improvements seventy-five bosoms an hour would not be too much to expect.

Operators generally dampen and press the shirts they are to iron, opening up the lot and placing them convenient to their hands before starting in to iron.

"Skeptical" may not have found it out yet, but it is sometimes very convenient to have an operator and machine that can run out seventy-five bosoms an hour when required even if it can't be kept up for ten hours, and I can assure him that neither are scarce in the laundries around here. EXPERT.

Philadelphia, Pa.

ONE HUNDRED NECKBANDS AN HOUR.

Editor National Laundry Journal:

A correspondent goes on to say that he has heard that a girl can iron sixty neckbands an hour. He did not believe such a feat could be accomplished. Now, I don't think that would be such a great feat. There is a girl working in a laundry in Iowa who will not only iron 100 neckbands an hour, but shake out all the shirts for the operator and place them on a table, and do so without exerting herself in the least. And as to quality of work, it challenges the world. N. E. S.

HE ANSWERS THE CHALLENGE.

Editor National Laundry Journal:

I notice that Mr. Cliff Taylor, of Cincinnati, has challenged a statement of mine, viz., ten to twelve hundred bosoms being ironed per day by one operator on one machine, but it is nevertheless a fact that there are operators in many laundries that can and do iron at the rate of 100 bosoms per hour, and sometimes in excess of that number; and in answer to Mr. Taylor I would suggest that he put the matter to a practical test by timing the most agile operator on the bosom ironer in his employment for an hour or longer, observing the following rules in doing so:

1. Have the roll hot enough to iron and dry the bosom, which should not be too damp, in four or five passes on machines, according to weight of material in bosom, ironing only one way.
2. Speed the machines to give the passes as enumerated in five to eight seconds.

3. Allow from thirty-five to forty seconds for changing and adjusting bosom on board.

4. Place the shirts that are to be ironed in close proximity to the operator, and the rack on which the shirts are to be hung when finished should be handy also, these being the normal conditions for bosom ironing.

Let me say further that in the majority of laundries a plain bosom is ironed in from four to six seconds, and an open front or plaited bosom, in seven to nine seconds, so that taking the average time in which the iron is in contact with the bosom at seven and a half seconds, and supposing that the bosoms are being ironed at the rate of one hundred per hour, less than fifteen minutes is occupied in ironing, and over forty-five minutes in manipulating the goods. The difference between quick ironing and slow ironing, as I understand it, lays mainly in the manipulation.

The present record of ironing shirts on the combined ironer, if I am not mistaken, is sixty per hour, ironing yoke, neckband, wristbands, and bosom. May I ask for a record on bosom ironing, or have I given it?

If Mr. Taylor will make the test, as suggested, and give the result I will undertake to get him an operator with a record of one hundred bosoms per hour, in the event of his best man making a failure. EXPERT.

IRONING OPEN FRONTS.

Editor National Laundry Journal:

Would be pleased to have you inform me of the best way to prevent the lower part of open front shirts from coming out shorter than the upper. We have considerable trouble with them and have tried several ways to prevent it. Yours truly, FRED ANDREWS.

Watseka, Ill.

* * * *

If the two parts were made to fit properly the prevention of their misfitting will most likely be found in using care when straightening the bosom out, both in starching and ironing process; not to stretch the upper part beyond the length of the lower. Owing to the position, and a larger surface of the upper part being exposed, the operation is very likely to stretch it more than the lower; in fact, the complaints in this line are quite common.

TO PREVENT COLLARS FROM CRACKING.

Editor National Laundry Journal:

Do you know of anything that will prevent lay down collars from cracking? Sometimes we use all corn and sometimes five parts corn and one part wheat. We have a great deal of trouble in this respect. B. & H.

* * * *

Use a larger proportion of wheat starch, and dampen the seams before turning, if not already doing so. The water with which the seams are dampened will be found more effective with a little glycerine and used hot.

USE OF GASOLINE FOR HEATING IRONING ROLLS.

Some time ago I noticed that a brother laundryman wanted information on the use of gasoline in the burners of ironing machines. I had trouble with it for some time, but found that by having a slight pressure in my gasoline tank I could get more heat. I had a tank made of copper, air tight, to hold about five pounds pressure; procured a bicycle pump; attached the latter to the tank by rubber tube, and find that it works O. K. The only fault is, I must watch close or I will get too much heat. I find that the plan saves about one-half of my gasoline bill.

Yours truly, W. A. A.

88 DEGREES GASOLINE—IT IS VERY DANGEROUS.

Editor National Laundry Journal :

We noticed an article from Wyoming, and feel that you must correct this article, as following the advice given therein is liable to lead to a great many fires. Eighty-seven or 88 degree gasoline is used for making a fixed gas by merely blowing air through it. Seventy-four degree gasoline is an entirely different proposition. It turns to gas only under heat and turns back to oil the moment it gets chilled. The burners designed for using these two grades of oil are entirely different. The average burner designed to use 74 degree stove gasoline with its overhead tank would be sure to explode if fed with 88 degree gasoline. Seventy-four degree gasoline is safe enough; 88 degree gasoline is as touchy as gunpowder. The advice given in said article is very dangerous. Yours truly, G. G. PLACE.

HOW TO KEEP IRONING ROLLS CLEAN.

Editor National Laundry Journal :

Will you please give me the following information: How to keep the ironing roll clean while ironing, have it free from leaving any yellow streaks on the linen, especially on plaits of shirts, edges of collars, or any raised part of the goods. My starch is prepared according to rules and I clean my roll with wax, but still I am frequently troubled with this. Yours truly,

LEON.

* * * *

The practical way to keep a roll clean when not in use, is to keep it well covered with flannel, wrapping the flannel at least three times around the roll, and fastening the ends tight; as nearly air-tight as possible, which can be very easily done by taking a pair of ordinary pants-rings, such as are used by bicyclists, and clasping them over the flannel at the ends of the roll. This will keep the roll both clean and free from rust where there is dampness in the laundry.

In order to keep the roll clean while in use it is necessary to keep your goods clean; which consists chiefly of keeping them free from surplus starch on the outside. This surplus starch sticks to the roll, and burns to a yellowish or brownish color, and is later transferred to other goods. Where such starch does get on the roll, the best way to clean it off is with a knife or a plait raiser, scratching it off carefully so as not to mar the surface of the roll, and finish by rubbing off with a dry cloth.

A similar trouble to the above is caused by having the goods too damp. Extreme dampness softens the starch, which may be well in the goods, but which in this extremely soft state is squeezed out of the goods by the pressure of the ironing machine, and burns on the surface, generally appearing more at the lower end of the bosom or at the latter end of collars or cuffs, as they pass through under the roll.

Wax has been used to a great extent for cleaning rolls, as well as for cleaning sad irons, but those who are supposed to be well posted, now claim, that the use of wax on the roll of an ironing machine is detrimental to the roll, and to the quality of work produced by it, for the following reasons: The roll of an ironing machine in the course of time takes on an extremely thin coat or surface, which is very hard and termed carbonate of steel or iron, as the case may be. This coat or surface of carbonate of steel is created by the action of heat in connection with the elements in the air; much the same as the surface of tools are tempered. The artisan in tempering tools, heats the metal and then holds it in the air, where the heat in connection with the aforesaid elements, creates this hard surface or carbonate of steel. This carbonate on an ironing roll is very, very thin, and the use of wax, it is claimed, destroys the same, for the reason that wax is said to contain both sulphuric and nitric acid.

Those who have had some experience in the laundry business know that a roll which has been used for some length of time will do much better work than a new roll, and the reason is not so much that the friction has put a smooth surface on it, but because of the hardness of the surface; the friction, of course, tending to make and keep it smooth.

SOME VALUABLE HINTS.

(Written Expressly for the National Laundry Journal.)

America has more custom steam laundries than any country in the world; also the largest shirt, collar, and flat-iron laundries—in fact, the best equipped laundries and the best machinery made for all laundry purposes.

THE OLD AND NEW.

The writer has bleached many a lot of shirts, and taken ten hours to do it. Now the bleaching can be done in twice as many minutes. Once upon a time the latest thing was to blue each shirt singly, taking an hour and over to a load of one hundred shirts; now a batch of that size can be blued and ironed inside of twenty minutes. To iron a shirt in ten to fifteen minutes was considered fairly quick time in the early days of custom laundry; now a shirt a minute by three girls, on three machines, is considered slow work. Not so long ago three to four hours was hustling a load of shirts and collars through the wash; today there are washmen who will put through four or five washings per day for each machine in use. Soap is neither what it used to be nor what it will be. Thin boiling starch has made starching easy, and so one might go on through every department of the work in a steam laundry and note the changes which Father Time has wrought. And it is not too much to expect that the near future will see some long strides made in the improvement of machinery and less injurious utilization of chemicals in the washing and bleaching process.

SOME SUGGESTIONS FOR THE FUTURE.

In the latter connection, let me mention a few of the wants in the line of machinery and supplies which would prove beneficial to the laundrymen who suggested the ideas to the writer, and some others besides:

Wanted—A combined water gauge and thermometer, for use in washing machines, that will indicate the temperature of the water, and also the quantity thereof in gallons.

Wanted—A good strong detergent and bleach in combination, to-wit: a soap that will wash and bleach at the same time.

Wanted—A washing machine for woolens, on the principle of the latest collar starching machines, having a succession of grooved rolls and carrying aprons.

Wanted—An oscillating fan, or system of fans, which could be swung overhead in the drying closet, to agitate the atmosphere and keep the heated air in circulation, with mechanical arrangement for imparting motion to these at will.

Wanted—An ironing board for open front, fancy and other shirt bosoms, with space and clamp for neckband on two sides. One so that a stripe down either side of a bosom can be ironed, leaving a fancy stripe, or double lap, down center, or other part missed, to be finished by hand or otherwise. With this preamble, we will now resume the subject of shirt, collar and other ironing.

Although not advocating fast ironing, the fact cannot be overlooked that very many laundries do good work, and do it quickly.

COST OF LABOR.

In one laundry shirt bosoms can be ironed at a cost of one dollar per thousand for labor; in another, two, or even three dollars, will be paid for the same amount of work. The secret of quick ironing lays in the aptitude of the operator and the heating of the iron. The latter must be kept very hot, while the former makes every movement count.

Half a minute is time enough to allow a good operator for changing and adjusting the bosom on a board, while the bosom should be ironed dry and plait raised inside of ten seconds. A shirt may be ironed dry and given any finish desired, gloss, medium, or domestic, in four passes of the roll, or in less than five seconds of time, the machine being speeded to give sixty to eighty passes of the board a minute, which is about the speed bosom ironing machines are usually run.

The manipulation of the goods being the costly part of the operation in bosom ironing, there are one or two points that should be attended to in the arrangements connected therewith. When the shirts are taken from the press after being dampened, they should be loosened up, at the same time the plain and open fronts should be separated. The shirts should be placed close to operator, and the rack on which to hang them, when ironed, should also be in close proximity. These points being attended to, a good operator will do the very best kind of bosom ironing at the rate of one hundred per hour.

A neckband can be nicely ironed in two passes, once on the wrong and once on the right side, ironing outside of yoke also, at the rate of one hundred per hour or over. A wristband can be nicely ironed in two passes, once on wrong and once on right side. On the body ironer one hundred shirts an hour can be bodied, and one hundred pair of sleeves is an hour's work on the sleeve ironing machine. Barber and waiter coats, and ladies' clothes of every description can be ironed on the machines just mentioned with equal facility.

COLLAR IRONING.

A collar or cuff can be ironed at one pass on machine having more than one hot roll, the motion through should be slow and the iron very hot, the finish being dead or domestic. For gloss the speed of machine should be accelerated and two passes will be required.

On a machine having a single hot roll a collar or cuff can be ironed a domestic finish in three passes, the first and last on the right side, the middle one on the wrong. To accomplish this the machine should run very slow, and the iron be kept very hot. For gloss finish, speed of machine should be increased and five passes will be required, the first two and the last on right side, the other two on wrong side.

On the combined ironer, from two to six collars may be ironed at a time, or two cuffs, from three to four passes of hot roll on right side, and two or three on wrong side, will finish the goods medium or gloss as desired. This applies also to the old reciprocating collar ironing machines.

The ironing machines may be kept and used at a temperature ranging from 200 degrees F., the ironing being done fast or slow, and costing much or little accordingly.

Quite a number of laundries, both large and small, pay little or no heed to the ironing of fancy bosom shirts, letting these go through the regulation course, ironing down the cords, sewn or raised work, without regard to the taste of the owner. An ironing machine will soon be invented to iron any bosom perfectly, and laundrymen in general will then sympathize with the æsthetic side of human nature, which requires the little things in life, as well as the big things, to partake of the artistic and the beautiful. Meantime it is better to do fancy bosoms by hand.

PADDING IRONING ROLLS AND BOARDS.

In some laundries very scant attention is paid to the condition of bosom-board, the felt, or other covering, is allowed to become hard, and consequently double or quadruple plies, in plaits and seams, are pressed so thin that the edges resemble a knife in sharpness. Plaits are hard to raise and cuts and cracks soon appear, when bosoms are ironed between two such unyielding surfaces. The padding on bosom and collar boards, should consist of one layer gum, one or two layers heavy felting, four plies canton flannel, and several plies of stout muslin; in all, the bed thus formed should be one inch thick. The padded rolls on collar and other ironing machines should be covered to the same thickness with felt, and over that two or three plies of muslin as a yielding bed keeps the goods the original thickness and the best results can be obtained in any finish where the padding on ironing boards or rolls is thick and presents a yielding surface to the goods.

HAND IRONING.

Hand ironing is so much out of date that it is a question whether it would benefit a dozen individuals to write a treatise on it, seeing it is an art that may now be said to be effete. Stock shirt ironing by hand will soon be the exception and not the rule. In a stock laundry visited not many months ago, two hundred dozen shirts, plain, open front and plaited bosoms, were being ironed on a full line of ironing machines, finishing and folding only being done by hand.

There are laundrymen who know that only a very small percentage of shirt and collar work is now ironed by hand, yet they hate to give up the methods which were in vogue in the days of their youth. The family buggy, the ancient nag, and six miles an hour is good enough for them.

There are also small hand laundries here and there, the proprietors of which are working with a purpose in view. They hope to get, and will very likely succeed in getting, business and bills enough to warrant them in putting in a steam plant. EXPERT.

A LAUNDRYMAN'S TALK

ON LOCATION, CONSTRUCTION, ARRANGEMENT AND OPERATION OF A LAUNDRY.

Editor National Laundry Journal:

Ignorance in some or all departments of the business which aims to produce high-grade work is the cause of failure, and it may be separated into three parts, or heads —location, construction and operation.

Taking the first; location. How often do we see good machinery, well arranged, in some old tumbled down shack, or in such a poorly arranged building as to require a large amount of extra handling; or where light and air were both scarce in quantity and quality; in fact, any old place where it ought not to be, in order to get cheap rent, not realizing that instead of being cheap the difficulties connected with it are far more expensive than a few dollars' additional rent, which would come back in short time with big interest. Parties so situated often wonder how and why their competitors, located in light, clean, airy buildings, with no better machinery, help or methods, succeed so much better. Locate yourself in a clean, light, airy building as the first thing necessary to success.

* * * *

CONSTRUCTION.

This subject, covering as it does the great variety of plants, is large enough to admit of much difference of opinion, but on two nicer points all must agree—cleanliness and convenience of arrangement, creating economy of labor and fuel are the points to be looked after. Take the first—cleanliness. Boiler room and coal bins should be completely shut off from other parts of the building. Often the fuel is dumped into the back end of the wash room, coal dust blowing over everything, or the flues are brushed and the soot covers everything. Dust from ashes flies about, and we wonder where the dirt comes from. The floor of wash room should drain itself perfectly, thereby insuring cleanliness in that department, with small outlay of labor.

The starchroom should be placed so as to be convenient to wash room, but where it is least exposed to dust, lint or specks of any description, and the floor perfectly drained. The dry closet should be so constructed as to allow easy access to interior. In the ironing room machines should be placed on zinc to keep oil off from floor and in such positions as to allow every part to be thoroughly cleaned. Hangers, shafting and pulleys should not be placed directly over any machinery. By taking these few precautions in construction the work rooms can be kept clean with little labor.

In arrangement of machinery size of plant enters largely into consideration. In small plants combine engine and wash room where it is desirable to use washer's services to handle engine. In large plants engine should be in boiler room. Engine and extractor should be so placed as to have good length to driving belts, in fact, very short belts are to be avoided at all times; discharge from washers should be free, and easy to sewer; sewerage large, and ample supply of pipes to washers, large valves easily handled; tanks containing water supply in position to utilize waste steam from engine for heating one or more of them; discharge from dry closet coil, mangle and all steam-using machines conveyed to a tank to collect the condensation; all plumbing and fitting so put together as to perfectly drain with but little labor.

Starchroom so arranged that access to dry closet is close and convenient. Starch cooking apparatus and starching machinery, dampening machines, tables and press close together to prevent unnecessary travel. In the ironing room shirt ironing machinery should be placed in order it comes into use to enable operators to pass shirt from one to the other without leaving machine. Collar and cuff ironer and collar and cuff finishing table close together. An arrangement of this kind will economize labor by preventing running back and forth to place goods where next wanted.

Arrange the bundle room so as to get as much light as possible and prevent travel for sorters. By a rearrangement of machinery and water supply I have seen cost of production reduced from $10 to $25 per week, by the saving created in labor and fuel.

* * * *

OPERATION.

In the marking room, accurate listing, coupled with plain, neat marking, assist largely, and prevent loss and the consequent expense. Wash room methods are innumerable; any good method, however, should produce what all want; clean, bright work. Yet we see work full of yellow, blue and gray streaks, and soap specks, have faded goods, shrunken flannels, and are subjected to many annoyances and losses which are unquestionably the result of ignorance or carelessness on the part of the washman. A few days past, in a large plant which had been in operation for years, I saw a lot of work streaked with blue. Upon asking the cause I was told that they were frequently annoyed that way. I gave the proprietor the name of an expert and for a few cents he has forever gotten rid of that nuisance. With the means now at hand for gaining information no one should have continued repetition of the same trouble in any department. Hand washing is out of date and any first-class washer should be able to handle anything from a silk handkerchief to a circus tent in his machines and do so economically.

In the starchroom irregularity and carelessness are the great troubles. Correct the first by using scales for weighing starch and measures for water; find out the degree of stiffness your trade demands and weight of starch per gallon of water to produce it, and insist all starch be made accordingly. Carelessness, poor wiping, and other troubles, can be quickly corrected by careful watching; no hand rubbing should be allowed as the machines properly handled fill the fiber of the goods and it is a useless waste of time and labor.

In the dry closet such devices for hanging should be used as will expose the largest surface of single thickness of goods to hot air; circulation in closet should be perfect in order to get rid of moist air. I have known closets to be remodeled and the time required for drying reduced to one-half with no higher degree of heat.

Dampening being next in order, I will say that my observation has been, that too much water is used and not enough time, coupled with the neglect of the press. Goods should have the moisture perfectly distributed; just enough to be soft but never wet. Bodies of shirts, which generally have the largest amount of water in them, should have the least. In dampening collars and cuffs the goods should be placed in press until moisture distributes, when in sheets great care should be taken that sheets always contain same amount of water and collars and cuffs remain the same length of time in press. Better results and fewer blisters are found by having little moisture in sheets and subjecting them to a very heavy pressure; even distribution of moisture gives fine finish, prevents blotches and mottled appearance.

Ironing machines should be kept carefully wiped, free from dust, lint and oil, padding lively and clean and entire ironing surface should heat evenly. I have seen a finely finished shirt drop into the basket every forty-five seconds after the first one reached the folder. However, dampening was perfect, machines in fine order, and operators skilled. The same principles pertain in collar and cuff ironing: friction, pressure and heat produce gloss or finish while pressure and heat without friction give the low or linen finish. No one should undertake to finish collars and cuffs without a full complement of smooth edging, seam dampening, point turning and shaping machines, each one of which suggest its own use.

The finished goods now being passed into the bundle room; much might be said about the systems of distribution, but I have already exceeded my intentions as to the space I would occupy and if my remarks help some one to correct some present difficulty or prevent some one from making an error in future my object will have been accomplished. A LAUNDRYMAN.

WHAT IS GOOD WORK?

IF ONE SUCCEEDS IN DOING IT PROSPERITY WILL BE HIS PORTION.

(Written expressly for the National Laundry Journal.)

What is good work? This question might be answered in several ways. We might say, for instance, that work is called good, which in the main suits the customer, and holds his patronage.

Good work, however, must be perfectly clean and free from stains. It must have a good color. This may be white or slightly tinted, it must not be yellow or streaked. It must be starched not too stiff, but just stiff enough, and entirely free from wrinkles. If a shirt, the starch must be in the bosom and trimmings, and not all over the shirt. The shirt must be nicely ironed, retain the original size and shape and be neatly folded. The collar band must not be shrunk or stretched, and must be formed according to the maker's design. Colored goods must not be faded and woolens must not be shrunken. If one shall succeed in doing all these things he will be doing good work and prosperity will be his portion.

THEO.

SUGGESTIONS, HOW TO BUILD BUSINESS AND MANAGE WORK AND WORKERS.

PLENTY OF ROOM FOR IMPROVEMENT ALONG ALL THE LINES IN A STEAM LAUNDRY.

(Written expressly for the National Laundry Journal.)

Some pretentious and well equipped steam laundries are rather peculiarly situated; their surroundings being anything but congenial, and it is remarkable the good quality of work that can be turned out of the large city laundry located in an atmosphere laden with smoke, soot and dust at all seasons of the year.

An eight or ten thousand dollar plant in a basement is another queer idea, and yet custom and hotel laundries of this class are to be found in underground premises in all of our large cities. In such cases there must be compensatory features, or good business men would not select locations where pure air, and, as the aesthetic says, "sweetness and light," are at a discount.

The largest custom steam laundry that ever the writer had anything to do with started in on a paid-up capital of $125,000. The company bought the site, erected the buildings, and equipped these with machinery having a capacity of $2,000 per week, based on a low price list. The smallest steam laundry of his experience opened up for business on a capital of $250 and could turn out $80 per week, based on standard prices, at an excessive cost of labor. Between these extremes are custom laundries of all sorts and sizes, which may be classified as shirt and collar, flat work, hotel and miscellaneous work laundries.

The machinery and equipment of a model steam laundry of the latter class, that is, a laundry where all descriptions of laundering is done, will cost $25,000, for which sum an outfit of machinery complete in every respect can be placed in position for turning out $2,000 worth of the best and highest grade work per week; the departments being replete with facilities for washing, starching, ironing and mangling, by the most approved methods and at lowest cost. Such a plant is worthy a location and building in every way suitable for carrying on the business of steam laundering.

A steam laundry can be equipped at a cost of $5,000 to do a miscellaneous business which, although limited in quantity, should be of the best quality.

A mangle, a lady clothes ironing machine, and a few accessories, with an additional washing machine, all of which can be purchased for $1,000, would give facilities for doing family and flat work in laundries situated in the smaller towns, the trade of which is at present restricted to shirt and collar work.

HOW TO BUILD BUSINESS.

A good way to start up a flat work trade is to take in all articles that can be put through the mangle, to be mangled only, after they have been washed and dried at home; no marking, no sorting is necessary, all that is required is to have the customer pack the goods in a basket and label them, when they are taken to the laundry, sprinkled, let lay for half an hour, then put through the mangle, folded and placed into the basket again and returned. Most ladies like to have their bed and table linen, towels, etc., nicely ironed; the mangle will do the work, and the laundryman will find that it pays him to undertake this kind of work, nor would it be long until his patrons decided to send their work to be washed as well as mangled, and thus a lucrative trade in family washing could be worked up, and mangles that at present are laying idle in our laundries half the time could be kept busy at least five days each week. Five cents per dozen for small and 10 cents for large articles, mangled only, is suggested as a basis from which to fix prices.

There are various ways of advertising the opening of a steam laundry for business and of soliciting trade from the public. One laundry starts up and in three months has a trade of $500 per week; another starts up and in the same period of time is doing nearly double that amount; a third goes slower but gets there all the same.

In most of our large cities there are laundry drivers who own their own wagons and routes, and take the laundry collected, where they choose to have it done, getting from 40 to 50 per cent discount from standard rates, and thus on an investment of $100 or less for a horse and wagon make a salary of $15 per week or over off $50 worth of work. Recently a large laundry started up in an eastern city by advertising for a driver with a route in each district of the municipality and suburbs. No difficulty was experienced in securing the services of a number and starting in with a trade of several hundred dollars per week.

In another city the management of an extensive plant began business by having several hundred laundry signs painted and distributed among as many agents the week before opening up, thus securing business enough in a short time to make a good showing. In both of the instances given the work came in all right, but the profits were not very encouraging, as it takes a large volume of work to make even a well equipped laundry pay by either of these systems.

Another laundry located in the suburbs of a live city and commenced business by opening an office on one of the principal thoroughfares of the town, putting on half a dozen handsome wagons and advertising extensively. The business done was small at first, but gradually increased, fully justifying the proprietors in the methods adopted, and demonstrating their good judgment in the adoption of sound business principles in trading with the public; the business becoming one of the most valuable assets of the firm.

Some laundries are a combination of the foregoing types. They have their own wagons and commissioned agents, and also do work for route proprietors; all of these methods being perfectly legitimate so long as the discount and commission allowed is not exorbitant; still the best method is to do business direct with the public, in the name of the laundry, its proprietor, or both, whether the work is collected through drivers, agents or other medium.

The route owner, or fake laundry proprietor—many of them adopt a euphonious, if mythical title, and have it embalzoned on every side of their one-horse shays, in some cases having the individual name with "prop." or "mangr." affixed should be given a wide berth. Own your business and your wagons; hire your drivers and uniform them; advertise and do the best quality of work that can be done for the prices received commensurate with fair profits.

There are stock laundries that work for outside parties, who collect and deliver the work, and as a rule they pay big commissions and turn out the poorest kind of work.

MANAGEMENT OF THE WORK.

A well equipped custom laundry can undertake a limited quantity of stock work to advantage, as a filler-in, making this branch of the trade secondary to the custom work; a larger force of hands may thus be employed all the week through; rush work and overtime, both of which are bad features of the custom laundry, may thus be dispensed with.

Much of the success of a steam laundry depends on the man in charge of the workrooms, who should be an expert laundryman, knowing every detail of the work, and having a fairly good knowledge of mechanics, colorics and chemistry as applied in the latest steam laundry methods.

Practical laundrymen, who go into the business for themselves, with the requisite capital, are almost invariably successful, as the knowledge acquired while working for others gives them an advantage over the man who has to acquire his experience after he gets into the business, although many of our most successful laundries, both large and small, are owned by men who had no experience in the work or practical knowledge of steam laundering when they entered the business.

Those who are new to the business should leave the practical part of the work entirely to a manager or foreman, or such employes as have had a thorough training and understand steam laundry methods.

Practical and competent laundry managers and foremen very often differ in their methods of washing, starching, dampening and ironing, and on this account it frequently happens that laundry proprietors are disappointed in the services of a man who comes highly recommended by former employers; but circumstances altar cases, and the washing compounds used in one place may give very unsatisfactory results in another; the starching methods by which good results are obtained in one starchroom may not be suitable in another. A knowledge of laundry machinery of various makes, the properties of water and the nature of the supplies furnished is essential to competency in turning out good work under conditions that are dissimilar.

In a new laundry things are not expected to go like clockwork the first week, and proprietors generally make allowance for mishaps and drawbacks incident to putting in operation a new plant, still an intelligent, practical laundryman will be able to point out and suggest a remedy for all defective work the first week, and will not even then allow work that is to any extent faulty go out.

Given a fully equipped laundry, with all the ordinary facilities for doing good work, competent help of his own selection, and the supplies he asks for, no excuse should be accepted for a continuance of trouble in getting out the work, either in a new or an old laundry, for perfect work and prompt return are two of the essentials to success in the steam laundry business, just as surely as poor work, shorts and unreliability are precursors of failure.

The foreman in the smaller laundry should be an all round practical laundryman, with at least seven years' experience in custom laundries, working under various conditions, advantages and the reverse. The fact that a man has had ten years' experience in one laundry, and given entire satisfaction, is no guarantee that he is going to be the same kind of success in his next place, the reverse being very often what comes about. Different machinery, water and supplies often make things so awkward for a man of restricted knowledge in methods and materials that he is compelled to experiment in his own behalf to find out what he was expected to know.

Take a washman whose experience has been confined to stock work, place him in charge of a custom laundry washroom, and he finds himself stranded; take a starcher from machine starching and put him to starching by hand and the work will be a new and trying experience for him.

Each department in a laundry doing $250 per week and upward, should be under a responsible head, who can be held accountable for the discipline of all subordinates; the care and cleanliness of the room, with all that is in it, and the carrying out of all details in doing the work according to the instructions of the management.

A washman need not be an all round laundryman, a chemist, machinist, or Jack of all trades. It is the foreman or proprietor who should decide by what formula the washing is to be done; the blue to be used, and the time the goods are to be run in the extractor. The washman's duty is to carry out these instructions to the letter, and see to it that all help working under him do likewise. An intelligent man of good judgment, who has had at least five years' experience in the washroom of a custom laundry, should be chosen to take charge of the washing department, and such a man will be found far more tractable and methodical in the performance of his duty, and precise in carrying out the details of his instructions, than one who knows the business from A to Z, and has forgotten more than his master knows. Practical, experienced help should be engaged throughout, with a few learners as assistants.

REMUNERATION AND MANAGEMENT OF THE WORKERS.

The method adopted in the remuneration of the help must be decided by circumstances. It should always be borne in mind, however, that the incentive to diligence on the part of employes in the performance of their duty is in exact correspondence with the confidence they have in their employer's ability and willingness to reward them sufficiently.

In too many laundries the fear of immediate discharge is used as an incentive to make industry and application compulsory. This method, however, is not only unkind and brutal, but it is unsatisfactory also, because it creates a class of unwilling and dissatisfied employes.

There is a class of help that is never satisfied. Some of them are good workers; fast, and can make high wages working by the piece, but with all they want more, and there are no laundries that have more trouble with their help than those where the wages paid are over the average.

When paying female help by the piece, fix the maximum amount to be earned at say $10 and the minimum at $4.

To allow a few girls that are very quick to make $12 or $15 per week, as is done in some laundries, while the majority of ordinary industrious workers can only make $8 or $10, discourages the latter and produces dissatisfaction, where otherwise there would and should be none.

If paying by the day, or week, have a fixed scale, and pay no more, no less. If a girl is being paid $1 per day goes off, and her place is taken during absence by a girl earning 75 cents a day, pay the latter $1 per day while she is filling the other's place, and carry out the principle involved in this instance in remunerating the help.

Doubtless some of the readers of these letters will say: "Well, it is an easy matter to preach but a hard matter to practice," and of this the writer is well aware from practical experience in the routine of steam laundry life. It will be admitted, however, that there is plenty of room for improvement along many lines in our methods of doing the work, and management of help. This remark being applicable in one case more than another, and these hints and suggestions are given for the benefit of those who are striving after something better in methods and systems, and all others whose motto in business life is "excelsior."

EXPERT.

CHICAGO GREAT IN ALL THINGS.

IN LAUNDRY MACHINERY AND SUPPLIES, GREATEST.

(Written expressly for the National Laundry Journal.)

A few days ago a friend of mine, and a prominent New York state laundryman, made a business trip to Chicago for the purpose of purchasing some machinery supplies, and he came home enthusiastic with that city from the standpoint of the laundry industry. He was in business long before the demands of the trade of the west made it necessary to establish such great manufactories there, and also called for the representation in that territory of all prominent eastern firms. I asked him for his impression of the city, and meanwhile had my note-book handy, for the purpose of telling the Journal, and through its kind offices the tradesmen of the Windy City what one frank, progressive, eastern laundryman thinks of it.

"Chicago," he said. "There is something in the very name indicative of power and action. It is not a name to be lisped, or uttered sentimentally. It is a big, vigorous, sonorous jaw-full." "And," continued he, at my further suggestion, "Chicago never vegetated—though it was at one time mostly vegetable. It covered at that time a vast expanse of flat and marsh, with wooden buildings and sidewalks on stilts. Then it was swept by fire. Grass is said to grow most vigorously on charred ground; anyway, out of the burned debris of its old self sprang the new city—massive, broad, gigantic. Today Chicago is one of the commercial wonders of the world. Its stormlike activity, the impulse vigor with which it takes up and carries onward big industrial burdens, calls out the applause of the west, and of the world, and even the silent admiration of the competing east. The metropolis of Illinois is geographically the center of the continent of North

America, so far as both land and water transportation is concerned. Its task is that of gathering, manufacturing and distributing the products of the soil, of machinery, and of brain, to a territory of matchless resources comprising many millions of square miles. The work is of gigantic scope, and forms a giant's burden; but Chicago's motto is 'I will.'

"In many of the tasks undertaken by Chicago and its enterprising people, its mammoth motive temperament, has carried it to accomplishments beyond all guessing—has landed it, in the vernacular of the great and breezy west, at the top of the heap. This is true, especially, of its connection with the laundry machinery trade. Not many years ago—and I, though not very old, can remember that time—scarcely any laundry machinery was manufactured there, while now it is the principal manufacturing and distributing point for laundry products in the world. It is the natural home and breeding place of supply concerns, and it was in Chicago that the department store and the mail-order house have had their greatest development. This fact has no relation to the laundry trade, but is quoted as an index to the different forces that have made the great city on the shore of Lake Michigan what it is today.

"The laundry machinery and supply people in that city have the sensible custom of congregating in so far as possible in one general locality. This makes it more convenient for all concerned, for it saves the time of the laundrymen who come frequently to Chicago, and allows them to accomplish by personal investigation what they could not do so well by correspondence. It has also a strong tendency toward the equalization of prices; it stimulates competition of the wholesome sort, and insures the keeping in stock of supplies and stocks which the laundrymen in the wide territory adjacent are liable to want at short notice. It also places the supply people in easier and more frequent touch with the agents of the transportation companies; and the localities selected are conveniently near most of the railway and express shipping depots."

EXPERIMENTS IN THE LAUNDRY.

ESSAY BY W. H. DORSEY, ATLANTA, GA.

Experiments are essential for improvement in laundry work. This industry is no exception to the general rule that there can be no progress or advancement by the constant use of old methods. This applies to every branch and department of the work; to the machinery, to the supplies, to the manipulation and manner of conducting the plant. The laundryman who does not experiment is apt to think that he has reached a stage of perfection, but the fact is he will soon be a back number; for the same progress and improvement is continually being made in the laundry business that is evidenced in every other line.

We often find laundrymen start out on a new idea which has been given them by some commercial traveler or visiting laundryman, without first experimenting to see if the ideas will conform to the conditions existing in his locality as to cause and effect. We should fully know that no one can go into a strange locality and offhand tell a laundryman how to turn out strictly high-grade work. They can suggest by comparison and their suggestions should be gladly received and be given due consideration, but should be acted upon with caution and fully experimented with before being put into actual practice on account of the different conditions existing in different localities; hence it behooves us all to constantly experiment.

One of the best educators is the L. N. A. convention, where we are given the benefit of well weighed thoughts and results accomplished from practical experiments; we are also shown every courtesy at the places of meeting, and there we congregate and discuss the practical workings on lines of thought presented at our meeting and we go home and experiment and find out if they will apply to our conditions; if not, we experiment further and try and obtain better results than were obtained from our old system.

We cannot say that our business is in its infancy, for those who have been engaged in it almost from its inception, tell us of the great changes in machinery and appliances, and the vast improvement in the work. Yet we almost all realize at times that there is a great deal more to be done before the business becomes anywhere near perfect, and the progress that has been made and improvements that are to come, is, and will be due solely to the wide-awake, progressive, up-to-date, intelligent laundrymen, who are not content to run along in the same old channel but are constantly and thoughtfully casting about for some new ideas, some new methods, by which a better grade of work can be produced; by which time and labor can be saved; by which wear and tear on machinery can be prevented; by which fabric will be better preserved, and by which other advantages can be grasped so as to increase profits, please patrons and build up trade.

The progressive laundrymen often find their experiments and changes a matter of considerable expense and loss, but in the end these men will be found to be in the front ranks of successful laundrymen. The business has grown and is growing at a rapid rate; to such an extent as to convince us all that there is much in store for future and provisions must be made in order to better handle the work and improve it in other lines.

We know that some of the methods now employed are very crude, so very crude, that most of us feel that we can ourselves see the changes which must be made, but at the same time cannot exactly design them. When some inventive genius does lay them before us they will appear as simple as all of the great inventions which have been made, and it will then be a matter of wonder and surprise why they did not occur to all of us. This development will come by successive steps, the question being how rapid. This depends entirely upon the amount of energy employed and the experiments undertaken. Money will be spent, brain matter worn out and labor employed, without all of which nothing ever will be accomplished.

Necessity in our business is the incentive which urges us on. Our days are filled with thoughts and study and our nights with dreams of how to improve our methods. We have our individual ideas, and our annual conventions have enabled us to meet and exchange them, to digest and assimilate them so that after they have been reduced to a degree productive of the most good, they have been adopted in various ways in our plants to our mutual benefit. Experiments and experience are both dear teachers, but they go together hand in hand in the laundry business and the more intelligent and progressive laundrymen are the most attentive pupils.

PRACTICAL HINTS AND SUGGESTIONS FOR THE HAND AND HOME LAUNDRESS.

Very often a bright, interesting article is gleaned from newspapers which, though it may not treat directly on the steam laundry methods, does contain some sound common sense on how to do family washing. The principle is the same as that employed in the public or steam laundry. A practical knowledge of how "mother" did the family washing, how particular she was in sorting the white goods from the colored; how careful she was to see that all flannels were properly washed and dried, and that no soap clung to them, has done more toward helping many men who have gone into the laundry business, than some of the advice given by experts.

The following article, by careful reading, ought to be of some value to all practical men or women in the business:

Starching is a very important part of the washing, says Cornelia C. Bedford, in Table Talk. The best gloss starch should be used. For a wash of moderate size mix a smooth paste of one-quarter of a pound of starch with one pint of cold water; set the pan on the side of the fire and pour in, slowly stirring all the time, three pints of boiling water. Let it boil for fully twenty minutes, then take from the fire. Add a few drops of good bluing and any one of several ingredients—one tablespoonful of kerosene, a half-inch square of spermaceti or white beeswax, one-half tablespoonful of borax, one tablespoonful of gum arabic water or one-half tablespoonful of butter—the object in each case being to insure a gloss. When the requisite addition has been made, it should be strained through a three-cornered cheese-cloth bag; it is of the proper consistence for shirts, cuffs and collars, but must be diluted fully one-half for skirts and still more for underwear. Skirts and underwear are dipped in the thinned starch then wrung in the hands as dry as possible.

A laundry soap should be so hard that it will not bear the print of the nails when pressed into it. A bar of laundry soap which has been drying for a year will do more than double the work of a soft, green bar, and for this reason there is no line of household supplies which it pays so well to buy by the quantity.

Ammonia is a most useful agent for all cleansing purposes, but the so-called household ammonia is so variable in quality that it is the best plan to buy it in quantity from a wholesale druggist. It will not be more costly in proportion than the prepared ammonia and a little will go a great way.

In Germany and Belgium the washerwomen dissolve two pounds of soap in three gallons of water, add one tablespoonful of turpentine and three tablespoonfuls of ammonia. In this the clothes are soaked for three or four hours, care being taken to cover tub or vessel as tight as possible. The effect is said to be almost magical, and the mixture has no injurious effect upon the linen.

A Parisian laundress who conducts several large establishments has entirely discarded the use of soaps, soda, bleaching powders and other varieties of detergents, using only plenty of water and boiled potatoes. The result is said to be all that could be desired.

In using a washing powder or fluid two points must be observed—to use in moderation and to dissolve or dilute before adding it to the water in the tubs. If the powder is sprinkled over a tubful of clothes, as careless laundresses have often been observed to do, it will not dissolve evenly, and wherever a lump lodges in the folds of a garment it will take out the color and rot the material.

Colored clothes should never be boiled, nor should soap be rubbed directly upon any article which will fade. Where there is danger of the color changing, the article should be washed, rinsed, starched and hung out without laying it out of the hands. Black goods and black stockings should be rinsed in a pailful of clear water to which is added one scant cupful of vinegar. A solution of salt—one pint to two gallons of water—will help to set many colored goods. For blue cottons dissolve an ounce of sugar of lead in a pail of cold water; soak the garments in a solution for two hours and dry thoroughly before washing and ironing. Silk hosiery and underwear should be soaked in a strong lather of castile or other white soap and warm water; they should be soaked in this for five minutes, the soiled spots gently rubbed with the hands and each piece squeezed and stirred thoroughly; this should be at once followed by very thorough rinsing, after which they should be wrung in a cloth; they should be dried in the shade and when almost dry should be rubbed and stretched in the hands to bring them into shape. No ironing is necessary.

In washing flannels the board should never be used nor should soap be rubbed directly upon them; the best result is attained by having the suds quite hot; this will dissolve and remove those particles of perspiration which would not be affected by cold water. The same temperature should be maintained with the rinsing water, to which a very little soap should be added. One process should quickly follow the other; the garments should be gently squeezed to remove the first suds, then, after rinsing, be pinned on the lines without further squeezing or wringing. When slightly damp they should be shaken, folded into shape and placed under a heavy weight until smooth; ironing will draw and shrink them.

SHIRT WORK BEGINNING WITH THE WASH.

PRIZE ESSAY.

First rinse your shirts in cold water, running ten minutes; discharge, and start first suds in lukewarm water, using soap enough to make a good suds, but not enough to run over. After running about ten minutes, gradually heat up until quite warm to the hand; run in first suds forty-five minutes.

Start second suds in not water; bring to a boil, and run twenty minutes; then add bleach (two quarts) and run twenty minutes longer. It is not necessary to boil the life out of the clothes, as I find by using too strong soap and boiling so as to foam and run over, it will form soap spots quicker than in any other way, although there are several other causes of getting soap spots. Rinse in two hot and two cold waters, five minutes each, and sour and blue in last rinse. Stop machine while filling for last rinse. Let in water enough to float the clothes, then start machine and put in two or three ounces of acetic acid; run machine about a minute, then add blue.

When first starting your goods in cold water, put in one quart of borax water, made by dissolving ten pounds of borax in twenty-five gallons of water. If you have never used this you will be surprised at the amount of dirt it will take out.

In making bleach, use ten pounds of chloride of lime to five pounds of caustic, or ten pounds of sal soda, and twenty gallons of water. Always use cold water in making bleach so as to retain its full strength. By using hot water you lose strength by its passing off in the steam. I have another bleaching process which will produce a somewhat finer grade of work, but it is harder on the clothes. Instead of bleaching in the suds bleach afterwards, using only a clear lime and souring in the first hot rinse; using two ounces of sulphuric acid. I never use oxalic for a sour, as a prominent chemist tells me that it will take at least four or five hot rinses to get it properly out of the goods.

In a laundry where you are doing 100 shirts or more a day, I would make two lots a day, closing the first lot in time to get out of the wash before dinner, so as to enable your starchers to begin starching right after dinner.

In starching open front shirts, starch the under half of the bosom a little longer than the top half, and you will avoid bulging out, and have a perfect bosom. Be sure and have the first lot all starched up at night.

Dampen down a part of your first lot at night (all that are dry) and the balance in the morning while your machines are heating. In this way you can begin ironing the shirts you dampened at night, as soon as your machines are hot. Starch and dampen your second lot in the same manner as your first, the opposite half of the day. If using hangers to dry your shirts on, use only a straight one. A shirt hung on the regular coat hanger slides down and spreads the shirt at the neck, making it almost impossible to iron a shirt so it will meet in the back when finished.

In dampening by hand (which is the best way) wring out the tail, and fold over bosom. Have your machines so arranged that you can pass the work from one to the other right along the line, and not carry your work back and forth. Have help enough to finish up the work as fast as it carries from the bosom ironer. If allowed to lay around and dry out, it takes a great deal longer to finish up and does not look as well either.

In closing I want to say you cannot take too much pains in the wash. It is impossible to turn out clear, white, spotless work unless the clothes are properly washed. The great trouble with men in washrooms, is they guess too much; sometimes running the clothes longer than necessary, other times not long enough. Some men guess at anything. Weigh and measure all supplies. The great secret of turning out good work is that it must all come out in the wash.

SHIRTS.

THE NUMBER OF TIMES LAUNDRY GOODS ARE HANDLED.

We requested laundrymen to furnish us with statistics of the exact number of times a shirt, collar, cuff and sock was handled from the time they enter the laundry until returned to the owner. For the first report received by us on this subject we agreed to send a copy of our "Laundry Manual," gratis. First received was from Joe R. White, Franklin, Ind. It was in detail, and the best one received. If the public—those who patronize the steam laundry—were made acquainted with these facts, there would be fewer complaints about the cost of doing such work.

Mr. White in his summary of the facts regarding shirts says:

First, collector; 2d, delivery to the laundry; 3d, marker and assorter; 4th, washer; 5th, extractor; 6th, removes from extractor; 7th, straightened out for starcher; 8th, starched; 9th, wiped; 10th, dryroom; 11th, removed from dryroom; 12th, dampened; 13th, placed in pile for ironers; 14th, bosom ironed; 15th, iron neck and wristbands; 16th, sleeves ironed; 17th, body ironed; 18th, finisher; 19th, folder; 20th, assorter; 21st, bundler; 22d; placed in distributing boxes; 23d, baskets; 24th, delivered to owner.

Collars and cuffs go through a very similar process and are handled 22 times. Socks are handled 12 to 14 times.

J. W. Grapes & Co., New Troy laundry, Bloomington, Ill., write that they handle shirts 21 times, collars and cuffs 18 times, and socks 11 times from the time they are delivered to the laundry until returned to owner.

* * * *

Mr. E. A. Hunt, Syracuse, N. Y., writes that as near as he can figure it shirts, collars and cuffs are handled only 19 times.

* * * *

J. P. Gilmore, foreman of the Union Steam Laundry, Circleville, Ohio, gives his figures, and is careful to enumerate each handling. His method differs somewhat from others, but undoubtedly he is correct. He writes that shirts are handled in his laundry 31 times; collars and cuffs 29 times, and socks 10 times. Evidently he handles them more than necessary, or counts the number of times more accurately than some others.

* * * *

A laundryman in Illinois writes that he prefers we do not publish his name, but states that he handles shirts 20 times; collars and cuffs 18 times; and socks 9 times.

* * * *

In answer to your question will say we handle a tip collar 41 times from the time it is received at the office until it is delivered. Yours very truly,

W. H. Dorsey.

Excelsior Laundry Co., Atlanta, Ga.

* * * *

Mr. E. G. Godfrey, Danbury, Conn., thinks shirts, collars and cuffs are handled in his laundry 39 times.

* * * *

I find after careful counting, that we handle our collars and cuffs 16 times; shirts 10 times, and socks 10 times. All this happens from the time they enter the laundry until sent home. Respectfully,

Greeley, Colo. J. D. Sevier.

The above answers being deemed of unsatisfactory quantity we repeated the original offer and the following are some of the replies received:

The first one received was from G. M. Brooks, proprietor of the Salina, Kas., laundry, and to him we have awarded the prize, "The Laundry Manual."

Mr. Brooks figures that from owner to washroom, shirts, collars and cuffs are handled five times. From being assorted for the washer to starchroom, twelve times. From starcher to being hung up for extra drying after being finished (we suppose he means thrown over shirt racks) eight times. From folder to owner, six times; making in all thirty-one times. He runs a hand laundry only, therefore handles shirts a few more times perhaps than necessary in a steam plant.

A. M. Covell, of the Snow Flake Laundry, Salamanca, N. Y., replies that he finds shirts require handling twenty-nine times, collars and cuffs twenty-one times, socks and handkerchiefs fourteen times.

Freeman & Kathan, Bradford, Pa., figure that shirts, collars and cuffs are handled forty-two times; socks twenty-two times.

F. T. Bredbenner, Lewisburg, Pa., writes that he handles shirts twenty-six times, collars and cuffs twenty times, socks ten times.

* * * *

Debring & Heffner, of the Monon Steam Laundry, Frederick, Md., state the number of times shirts, collars, cuffs and socks are handled in their laundry as follows: Shirts, 28 times; collars, 28 times; cuffs, 27 times; socks, 15 times. This appears to be a fair average for the work.

* * * *

A laundry foreman writes that he does not believe it possible for any one to figure out the problem, but after trying to do so several times he has concluded that shirts are handled thirty-seven times; collars and cuffs twenty-seven times, socks eight times.

Mr. J. F. Potter, president of the Wheeling, W. Va., Laundry Co., writes that any laundryman who handles his goods less than thirty times he would like to hear from with a full description of their process. He thinks some of them count only the actual processes the goods go through, and not the actual number of times they are really handled. Mr. Potter gives his figures very complete as follows:

First, the bundle is brought to the laundry by the driver and placed in the marking department; two girls mark in, one opens the bundles, calls out the number of pieces and the other lists them and marks such pieces as are not already marked; this we will say requires them to pass through two persons' hands and makes the third time handled. They are then taken by the washman and placed in the washers, this is the fourth. After washing is completed they are lifted out into a truck tub, 5th; then placed in the extractor, 6th; taken out of extractor, 7th; 8th, is to straighten out and place in starcher; 9th, take out of starcher; 10th, place on table and wipe off surplus starch and lay on a rack ready for the dry room. Then they are taken by a girl and placed in dry room, 11th; 12th takes them out of dry room; 13th runs them through the dampener; 14th folds ready for the press; 15th puts them in the press; 16th takes them out of the press; 17th irons the bosom; 18th irons the wristband; 19th irons the sleeve; 20th irons the body; 21st irons the yoke and inside of neckband; 22d irons outside of neckband and moulds; 23d finishes and blocks the bosom ready to fold; 24th folds and puts on the band; 25th raises the eyelets; 26th sorts; 27th checks the articles up and places them on the table ready to be wrapped; 28th wraps the bundle; 29th separates the delivery and shipping bundles from the office and places them where they belong ready for delivery; 30th delivers them.

To sum up: Shirts are herein said to be handled from 20 to 42 times; average, 29 times. Collars and cuffs, from 16 to 41 times; average, 25 times. Socks, 8 to 15 times; average, 10 times.

COLLARS OTHER THAN LINEN.

A reporter of the New Orleans Times-Democrat in an interview with a prominent haberdasher gleaned the following story:

"Oh, yes; paper collars are still made. Thirty years ago they were worn by men who considered themselves very good dressers. Now their use is confined to a few old fellows who won't change, and of course they have to be manufactured to order. There are several customers for them here, and a wealthy planter who lives some distance north of the city orders them by thousand lots.

"I was in New England last summer, and while visiting a little town made famous for its collar makers, saw an old plant formerly used for turning out the paper article. It had been rusting away in silence for years. The buildings easily covered an acre, and the machinery was enormous. I was told that in its heyday the firm shipped its product all over the world, and sold paper collars even in the Fiji islands.

"The celluloid collar industry is still alive. Who buys them? Seafaring men, particularly those whose voyaging takes them into the tropics. The lumberman up in Minnesota and Wisconsin regions; and policemen, who would find it impossible to keep a linen collar looking neat in bad weather. The great objection to celluloid collars used to be their inflammability."

WATERPROOF MARKING INK.

An ink that will mark boxes and other articles in such a manner as to resist the action of rain, and at the same time fulfill about every requirement can be made by mixing thin shellac varnish with lamp black. As the alcohol with which the varnish is mixed evaporates rapidly, the mixture should be kept covered when not in use. This may be accomplished by using a wide-mouthed bottle, or can, for the preparation, and having the marking brush pass through a piece of cork somewhat larger than the mouth. Then, when the brush is returned to the can, the cork will cover the opening—not tightly, but sufficiently for all practical purposes. Should this mixture at any time become too thick, it may be suitably diluted with fresh alcohol.

MONEY MAY BE LAUNDERED.

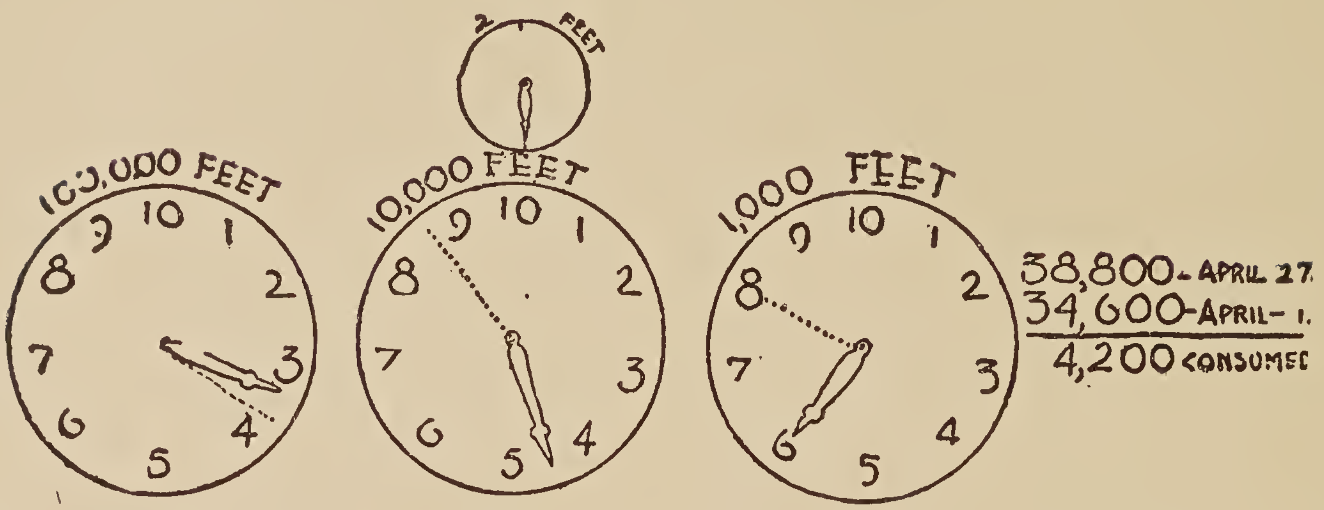
FOR FEAR OF GERMS MANY WOMEN NOW REFUSE TO HANDLE SOILED BILLS.

An eastern bank teller said recently: "The demand for new bills for shopping is on the increase among women and is getting to be a nuisance. A great many women won't handle any currency that is not absolutely fresh and crisp, and now all the banks that make a specialty of catering to women's custom keep a supply constantly on hand for that particular purpose.

"It is not generally known, but bills can be washed and ironed as easily as a pocket handkerchief. A wealthy woman of my acquaintance has all her money laundered before she uses it. She turns the notes over to her maid, who washes them thoroughly in hot water with ordinary soapsuds and spreads them out on a table to dry. Then she dampens them slightly and presses them with a medium hot smoothing iron. If the bill is not frayed this process will make it as bright and crisp as when it first left the treasury. It is astonishing how dirty money gets. If one could see the water in which a dozen commonly circulated bills were washed it would give them a permanent aversion to the trade of teller."

[Here is a chance for a special department of the laundry business. We know that every laundryman launders clothes for money, and why not launder money for money? It's a great scheme, but one that won't work well in steam plants. It might be tried in hand laundries.]

HOW TO KEEP TAB ON THE GAS.



The above diagram shows the face of every gas meter in use, whether in the laundry, factory or private residence. By carefully noting it anyone can compute the amount of gas used during the month. It is simple enough to read and every one who uses gas should study it carefully, so when the inspector calls and makes his memorandum from it you can compare it with yours, and if incorrect his attention should be called to the fact immediately; do not wait until he has made his report at the gas office.

On each meter are found three dials. The dial on the right hand shows the hundreds of feet consumed; the one in the center the thousands; the third, the tens of thousands. The dial above the three does not concern you. It is merely for testing the meter.

Every time the hand in the first dial moves one number 100 feet have been consumed. When the hand reaches 10, 1,000 feet have been consumed; then the hand in the center dial moves one number. When the hand in the center dial gets around to 10, the hand in the third moves one number.

The gas company never gives a meter to its consumers on which the hands of the dials point to nothing consumed. The hands are always well along in the numbers. This is done to confuse, but the computation of the gas consumed is none the less simple.

In the accompanying illustration the hand on the third dial points between 3 and 4. This means that over 30,000 feet of gas passed through the meter. On the center dial the hand points between 4 and 5, indicating that more than 4,000 feet of gas has been registered by that dial. On the first dial the hand is on the figure 6, showing that the dial registers just 600 feet. This would make altogether the number of feet registered by the meter 34,600.

Now that is the condition of your meter when it is placed in your house, say on April 1. Following the dotted lines which represent the hands of the dial you will find on the third dial the hand still between the figures 3 and 4, the hand at the center dial between the figures 8 and 9, the hand of the first dial on the figure 8. This gives you 38,800 feet consumed. You started with your meter with 34,600 feet consumed. The difference, 4,200, gives you the number of feet that has passed through your meter from April 1 to April 27.

SHIRT WORK IN ALL PHASES.

HOW ONE LAUNDRYMAN DOES IT WHO HAS BEEN SUCCESSFUL.

(A Laundryman's Prize Essay.)

I noticed your request for essays on shirt work. Now, as I haven't noticed very many taking advantage of your liberal offer, I will steal a little time and tell a few things that I have learned in my fourteen years' experience cleansing the "festive shirt."

The washers should be in hands of an experienced workman, and the said workman should be looked after frequently, as he is apt to get careless and slight his work. No formula will do good work every place alike. There is so much difference in water that what works "bully" one place don't work good even at others. But I have found that where the following is backed up with good supplies it generally produces clean clothes and a good color: Cold rinse, ten minutes; warm suds, twenty-five minutes; hot suds, with six to eight ounces soft bleach, thirty minutes; hot rinse, ten minutes; hot sour (oxalic), fifteen minutes; hot rinse, ten minutes; cold rinse, five minutes; float the clothes, and blue in cold water. Care should be used to give the clothes plenty of time in the extractor, for if water is left in them it does not give the starch a chance to make the goods stiff, and on account of this many a pound of good starch is "cussed" and sent back to the poor abused supply men.

The starchroom should be in the hands of an expert, for in order to turn out good work the starch must be made and used correctly, or no matter how good, there will be trouble, and lots of it. Most people are using wheat and corn mixed in different proportions; some use two-thirds corn and one-third wheat, and other reverse this method. I favor half wheat and half corn. Boil the wheat fifteen minutes, add the corn and boil five minutes more; a little lard or wax added is about all the dressing used, still there are a number of good things on the market for that purpose.

The dry-room is another "bone of contention" to some laundrymen. This important part of the laundry should not be neglected. A double coil dry-room, with eighty pounds of live steam on it should dry its full capacity in one hour. If it does not there is something wrong in its ventilation. All dry-rooms should be lined with asbestos, as this keeps the heat in and cold out; and it is still better to cover the asbestos with zinc, or galzanized iron, then you can turn the hose on it once a week and wash out all the lint and dirt that accumulates in such surprising quantities, and causes lots of trouble. The ventilation must not be forgotten, and my idea is to bore six two-inch holes in the front, under the racks, and have the vent pipe (a six-inch piece of galvanized pipe across the back end of the room) about eighteen inches from the roof. Have holes in bottom of this pipe at intervals of eighteen inches, then have a six-inch pipe connected with this one and run it through the roof of the dry-room and up in front of the exhaust fan, if you have one; if not, connect with some chimney that has no stove connected with it, and I think there will be no "kick" about the dry-house.

There are lots of good dampening machines on the market that will do good work if properly adjusted. I favor the towel system. I am using a heavy linen crash toweling, from eighteen to twenty-two inches wide. I cut it into pieces twenty-four inches long, dump a hundred or any smaller number of them into the stationary tub, rinse them in water that is hot to the hand; put them in the extractor and run them thirty seconds full speed (my machine runs 1,500), and take them to the dampening table; spread a shirt out, and put a towel over the bosom, neckband and yoke; spread out the wristbands on the towel, throw the skirt over, sprinkle lightly, and continue this till I have a sufficient number to fill the press. Then I put the pressure on thirty minutes and they are ready to iron. I dampen collars the same way, only have strings of toweling five yards long; roll them up and use no pressure. This is the best dampening scheme I have tried and is very rapid. The goods being properly washed, starched, dried and dampened the ironing is easy.

Keep the boards well padded, the machines hot and the operators careful, and good work is insured. I am using a discarded neckband machine for ironing wristbands. This is the first part of the shirt we iron; then the bosom; after the bosom the neckband. After the neckband the body, which is done quickly on account of the dampening process we use, then the sleeves, after which the finisher gets her turn. When she has done the shirt is neatly folded and has an attractive band put around it, and is ready for the sorter.

The successful laundryman must have some money, several pounds of gray matter, patience galore, a forgiving nature, an elastic conscience, a vast amount of creative genius, a great deal of executive ability, and be able to systematize anything from a "peanut" stand to a "circus," and keep perfectly cool when the mercury has jumped out of the top of the thermometer. ONE OF THEM.

CORRESPONDENCE.

This department of the National Laundry Journal is always open for discussions on any subject relating to the trade, but we will not necessarily indorse the opinions of the contributors. Anonymous communications will not be accepted or published, but correspondents must attach their names, not necessarily for publication, but as an evidence of good faith. All letters will be subject to revision and correction.

SOME GOOD QUESTIONS.

Editor National Laundry Journal:

As a beginner in the laundry business there are several difficulties which do not seem to mend themselves. I would be glad if any fellow-readers will give me their help.

First—In washing shirts and collars, I cannot get the bands of shirts and top inside edge of collars as white as they should be; they have a yellowish tinge. What is the cause of it, and how can it be remedied? I make my own soap, but am not sure that it is very good. Freight is so high here that I cannot afford to buy and have it shipped to me. Would be obliged if some one would give me a good receipt for soap, and for bleach also, as I likewise make my own bleach.

I make my soap in barrels; sixty pounds of tallow, melted and let cool, and twelve pounds of caustic potash dissolved in one gallon of water; mix and let harden. For use I add water, and if necessary, a little more lye, and boil until all the same is dissolved.

In making bleach I take a ten-pound can of chloride of lime, five pounds of caustic soda, dissolved in a bucket of water, and about twenty-five gallons of water.

In washing I run ten minutes in cold water; run off; run in warm suds one hour; run off; run for another hour in boiling suds and two quarts of bleach; then two hot rinses, and two cold rinses; sour—oxalic acid—in first cold rinse, and blue in the last. I find that even with suds running over, on putting in the bleach the suds are entirely killed.

In rinsing, should the washer be full or not? I find that the soap lathers very lightly; does not seem to get a heavy enough lather. Does that make any difference to its washing qualities?

In starching I have been unable to get shirts stiff enough. I use only the thin boiling wheat starch, and run them in extractor twenty minutes. How should I mix corn and wheat starch to get good results? How long should it be boiled? Wheat starch is rather expensive.

I have used corn starch, but it was so thick that I had to give it up. Does corn and wheat starch mixed make bosoms stiffer than wheat starch alone? If I find starch too thick, what acid, and how much should be put in to thin it.

Yours truly,

BEGINNER.

In reply to our inquiry, "Beginner" sends us further information as to his methods, and the materials used, as follows:

"I have only one washer, so have to wash collars, cuffs and ladies' clothes on one side, and shirts on the other. Is this a good plan? The worst feature of the latter is that the ladies' clothes get too blue when the collars and shirts are right. Can you give me a good and fairly quick way of washing? Also suggest how I can handle work with the one washer so as to do good work with the most convenience.

"As regards washing flannels I wash by hand, with manufactured soap and borax. Should flannels be run in the extractor, or is the ordinary wringer sufficient? Some flannels feel sticky after washing, especially if new. How can I remedy this?"

* * * *

At the time of our making inquiry of "Beginner" for further information, we gave him such advice as we were able to on the information then at hand, telling him what we thought the cause of his trouble was, and giving him some advice as to how to remedy it. He now writes us that since becoming so informed he has been using the following process, which resulted in better work, and no yellow edges:

"Ten minutes in cold water with one quart of borax water added; thirty-five minutes in warm suds; run off; twenty minutes in hot suds, and then ten minutes more with the suds at a good boil; hot rinse, five minutes, and then from one to two quarts of bleach (according to load) in hot rinse (two inches of water in glass), run for fifteen minutes in bleach, then rinse for ten minutes, and hot and cold rinse, with sour and blue.

"Lately I have had a large batch of shirts, etc., and have washed all shirts in one load, and made a second load of collars, cuffs and ladies' clothes, with enough flat work, principally table covers, to make up a load. Washer is double compartment."

* * * *

"Beginner" may have a great deal to learn about the laundry business, but he certainly seems to be started on the right road for learning it, and no doubt will in time far out-distance many of his fellow laundrymen who have not as clear a conception of their own shortcomings, or are too proudly sensitive to make inquiry. The JOURNAL takes pleasure in aiding such men as "Beginner," and there are many in the business who also take interest in men of his inquiring turn of mind, for these of inquiring minds are the ones who recognize imperfections, seek to better them, and in the course of time come to be numbered among the experts of the trade.

He was consuming time enough in his washing process, but his process was altogether too mild in many respects. However, as shown in the latter method, by the changes made above mentioned, and the process that our previous recommendations have led him to adopt, he is getting better results, and will, with continued practice, get much better.

Clothes will not rinse well with a machine full of water; they will simply float, and the cylinder will revolve around its contents without friction, and without, of course, carrying them around with it or giving them the activity that they would get by being carried up with the cylinder part way, then dropped into the water; more water, however, can and should be used in rinsing than in washing, without defeating the purpose as above mentioned.

Regarding the lather of soap, a good lather is generally taken as an indication of good soap, but it is not conclusive. There are soaps, no doubt, that will wash well and not lather well, but it is better to follow the rule of good lather than the exceptional condition last mentioned.

"Beginner" says that he has been unable to get shirts stiff enough unless he dries them before starching, using only thin boiling starch, and asks, "How should I mix corn and wheat starch to get good results? How long should it be boiled?" There are several contingencies possible in the starching, dampening and ironing that may assist one another in the production of stiff work with the least possible amount of corn starch in a mixture with wheat; or the result may be the opposite; all depending on the knowledge, experience and skill of the operator or operatives; information or instruction concerning which can not be given that will insure the best results. These results come with experience and can no more be given in expectation of perfect accomplishment resulting than can instruction concerning the making of a piece of furniture. It is an accomplishment sometimes called "the know how," and can only be had by experience.

However, we can give these facts concerning the starches and their respective merits. Wheat starch is the more expensive, and has the advantage of giving a better color, a more pliable finish, and of going further than corn starch. Corn starch, on the other hand, will give greater stiffness and is much cheaper. Corn and wheat starches are used mixed in nearly every percentage of proportion by different laundrymen, some making the mixture about 90 per cent of one and 10 per cent of the other, while others use it in just the opposite proportions; about one-third wheat and two-thirds corn appearing to be the proportion most commonly used.

What is gained in stiffness is lost in nicety of color and flexibility of finish, two very desirable attainments. Each laundryman must use his information, knowledge and experience to the best of his ability for the accomplishment of the grade of work that his individual circumstances make it necessary for him to produce. In endeavoring, however, to produce work of fine color and flexible finish, it is well to know that dampening and ironing will assist or defeat the aim. To get the proper amount of dampness without getting the least bit more than is necessary requires that "know how" before mentioned. The proper heat of the iron or roll of the ironing machine, so as to get the utmost heat without getting enough to harm or discolor, is a like assistance, and these two latter accomplishments will materially assist one to produce a fine color and flexible finish together with greater stiffness by the use of the least possible amount of corn starch in his mixture.

We believe that slight boiling of starch, say ten minutes, is sufficient, but additional boiling should not hurt it, and some laundrymen believe that it should be boiled no less than thirty minutes.

We have gone to greater length in the matter because it involves a principle that permeates to some extent the entire process of laundering, and that principle is, that it takes time, experience and industry to overcome the perplexities of the business and accomplish the best results, and without them, the most abundant information from the highest source would be of little avail.

As to thinning starch when too thick, it is said to be sometimes thinned successfully by the use of sulphuric acid or acetic acid, and sometimes alum is said to be used.

As a suggestion for handling work with one washer most conveniently we would say: Shirts should be washed by themselves and likewise should collars and cuffs. They can, however, be washed together, and in small laundries it will be found desirable from an economical standpoint to still put in other goods in order to make a paying load. When other goods must be put in, those (white) of the most cleanly nature, and the freest from lint, should be selected. Sheets and pillow slips would be the most likely to answer for this, but in no case would we recommend putting in any goods of a loose and linty nature, such as some kinds of table-cloths and napkins.

Now, for flannel washing there are perhaps as many varying opinions on this question as on any involved in laundry work. Some advocate washing them in the machine, but the majority do not. There are but few laundries, at any rate, that have business enough to make a load of flannels and have them all of one quality and color, and we would not recommend any laundryman to use a washing machine for flannels unless the entire work is done by himself personally, for otherwise he will sooner or later have a machine load of flannels to pay for.

Fine flannels should be washed in a suds previously prepared by dissolving the best soap obtainable, and when thoroughly dissolved it should be beaten or stirred to a good stiff suds in a tub of water, so, when the flannels are put in, it should be of a temperature about as hot as one can bear the hand in. Don't be afraid of its being too hot if a person of ordinary sense of feeling can hold their hand in it. The water should be kept at the same temperature, and if it can not be conveniently kept so in the tub, take a good-sized dipperful out and keep it at all times over a gas jet or on a stove and from time to time put a little in to keep up the temperature.

Take your flannels one piece at a time, the finest and cleanest of the white ones first, immerse in the suds, knead, squeeze and press them, or whip them about in the water, but don't rub them on a board. Five minutes of this kind of manipulation will often be sufficient, but it should not exceed ten. Then strip the goods (don't wring them, even by twisting in the hand) and pass them to another tub of water of the same temperature as the first, which second water, however, should be slightly soapy. Souse them well in this second water for rinsing; strip them out, and hang up in a hot dry room at once, not letting them lie for a moment, keeping them as nearly warm until they get into the dry-room as the water from which they were taken as possible. After all the white goods are disposed of, take those of lightest colors and so on until you get to the darker ones or get your water so soiled as to need changing.

The above is recommended for the finest kind of flannels, and can be departed from for coarser goods or for badly soiled fine ones, as circumstances may require. Very much soiled flannels may be rubbed on a washboard, but soap should never be put onto the goods. It should be dissolved and whipped into the water as above described, and as the suds weaken add more strength of dissolved soap. Extractors or roll wringers may be used before taking flannels to the dry-room, but the use of either should be moderate, which means that the extractor should not run at a high speed nor for a long time and that a roll wringer should have but very little pressure on the rolls when the flannels are being passed through.

IS PLEASED AND THANKFUL.

Editor National Laundry Journal:

The last two numbers of your Journal reached me in due course of time and have been more than ordinarily welcome on account of your own lengthy reply and also letters of help from other readers in answer to my questions. Please convey to them, and include yourself, many thanks for trouble in trying to help me out of the yellow edges.

Again thanking the Journal and its readers for their valuable assistance, I remain, yours faithfully,

Beginner.

A COLLAR TROUBLE.

Editor National Laundry Journal:

The inclosed two collars are samples of a bad lot turned out last week. Can you help us to locate the cause of the cloudy appearance?

We wash as follows: Cold rinse ten minutes; warm up and run fifteen minutes; warm rinse five minutes; boiling hot suds fifteen to twenty minutes; warm rinse five minutes; cold water; two quarts of chloride of lime bleach fifteen minutes; hot rinse with eight ounces acetic acid six to seven minutes; boil three or four minutes; turn off steam; let run eight minutes; warm rinses until water is cold, two or three; blue; cold run of, say, six revolutions.

Starch for collars is blued to obtain good bright color. We don't know whether the fault is in insufficient souring or rinsing, or too much blue in the starch. We soften water with a well-known soda for every suds.

M. & D.

* * * *

The collars referred to show indications of what would, if accompanied by other proper treatment at all parts of the laundering process, result in excellent work; that is to say, the washing evidently appears to have left clear linen in places where there has been but little soilation; the color at such places is good; and the ironing in all respects is excellent. The general appearance, however, is bad.

In our judgment the defect is not caused by either insufficient souring or rinsing; certainly not by the latter. Neither does there appear to be any stint in the changes of water or time consumed in the whole process, but in all the manipulation there appears to be but very little actual washing.

Beginning as you began your process, we will criticise and advise as follows:

In the first cold rinse we would advise using a little borax, and instead of heating this up and running for fifteen minutes longer in the comparatively loose dirt that will readily separate from goods in such a first bath, we would advise running the dirt and dirty water off.

Next, we would advise more time in suds and two suds instead of one of fifteen minutes, as shown. The goods should be run in the first suds for a greater length of time than fifteen minutes, say twenty to twenty-five minutes; bring the temperature of the water up to a good heat, about as warm as it can be gotten without boiling.

Start for the second suds in water as hot as can be furnished; if not kept on hand in tank of sufficient heat it should be so kept, as the temperature of clothes or of the water in which they are washed or rinsed should always be kept up or increased as the work proceeds, and never should be lowered until the washing and rinsing is entirely completed. The reason for this is that heat expands the fiber of the goods and allows the more easy expulsion of the dirt, while cold contracts the fiber, closing the same rapidly and tending to retain or retard the expulsion of what soil or soap might still be remaining in the goods at the stage of the process where the cold water is used.

After starting in the second suds, turn on steam very slightly, just sufficient to bring to a boil in about fifteen minutes, and let the boiling continue for fifteen minutes more. Rinse in two very hot waters.

We see no benefit in bleaching in cold water; the action of bleach is certainly more rapid under heat, and consequently there can be time saved by using it hot. The quality and quantity of water and soap used are important factors, and therein may lie the cause of the trouble. On these points the correspondent is silent. It is a common oversight, however, with correspondents on matters of this kind that they do not give the details of their process and the materials used with sufficient fullness for one who is at a distance and has only the information contained in the inquiry to locate the trouble with the best accuracy and advantage.

HAVING TROUBLE WITH BLACK SPECKS.

Editor National Laundry Journal:

I would like some information through the JOURNAL as to the cause of those "black specks." It is a little curd like lime that gets between the lining and the outside ply, and when ironed turns a black speck like mildew. Sometimes I think I boil the clothes too hard.

As to making starch: I make my starch with live steam, using from three-fourths to one pound of wheat starch and same amount of corn starch to two gallons of water. It does not give the right finish. The clothes do not iron smooth, and feel sticky when ironing.

A. A. M.

* * * *

Regarding the black specks, the cause and remedy are fully treated on in "The Steam Laundry and Its Methods," page 61.

Concerning the starching, we are inclined to the opinion that the trouble is not necessarily in the making of the starch, but that it is owing more to improper handling of the work. There may and there may not be enough starch worked into the goods to give the desired stiffness, but as A. A. M. does not complain on this point we presume that there is; but evidently there is a surplus of starch left on the outside which should be wiped off more cleanly.

The whole matter, trouble, cause and remedy, are fully treated on in "The Steam Laundry and Its Methods," pages 37, 61 and 62, and "The Laundry Manual," pages 141, 163 and 164. These books should be in the hands of every practical laundryman.

SOMETIMES CALLED SOAP SPECKS.

Editor National Laundry Journal:

We inclose you end of a wing-point collar, which you will notice has a black spot in the corner (point). We have been troubled a great deal of late by these spots, only on wing-point collars. Can you give us any information in regard to cause or remedy? Yours truly,

U. Bros.

The cause of the trouble is what is known as soap specks, and comes from an excess of alkali usually, and from insufficient rinsing sometimes.

Wing-point collars are particularly susceptible to this trouble, for the reason that the collar, becoming cracked from constant sharp turning, the curd works through the crack or opening and down into the point; the point being more acute than in other collars, it is harder to dislodge any such matter from it.

It will occasionally be noticed that the collars so affected belong to one person, which signifies that the accumulation may have taken place at some previous washing or may have been accumulating from time to time.

THINKS THEM STARCH SPECKS.

Editor National Laundry Journal:

As I have never seen any definite answer as to what the so-called soap speck is, I will give an experience that happened recently. Having four collars that were too blue from cold starch, I put them in a calico wash that was being rinsed in hot water, and when I took them out they were completely filled with the specks, so that instead of being from the soap they are starch specks. Yours truly, H. C. Kromer.

ONE WAY OF CORRECTING IT.

Editor National Laundry Journal:

I notice that a brother laundryman is having trouble with soap or black specks, and if permitted I will give him the benefit of my experience. I believe the trouble in his case is caused by an excess of alkali and insoluble soap. The lime curdles, setting the soap in the edge points of the collars, and becomes insoluble, which even proper rinsing will not remove. These spots or specks, though, will disappear by boiling in strong suds and rubbed with paraffine. A good formula to go by is to bleach in suds, and make the proportion eight pounds of soda to ten pounds of lime. Run thirty minutes and boil the last ten minutes. Keep the suds up well, but not to an overflow. Follow with a hot rinse and add a handful of borax, which will improve the goods, as well as saponify the surplus soap left in the seams and edges. Reduce the temperature gradually and blue in cold water. SHEWARD.

Chippewa Falls, Wis.

HOW ANOTHER REMEDIED IT.

Editor National Laundry Journal:

In regard to our brother who has been troubled with black specks, permit me to tell you something of the experience we had along this same line. We consulted supply houses, chemists and other laundrymen, also sent them tips of the collars and various other things, but all of no avail.

Finally I located the trouble. At the commencement of the trouble a so-called laundry expert came along who gave us a formula for making our own soap, and we tried it according to directions; but lo! when looking at the clothes after the first application we found them full of specks, tallow, etc., and for four months we were tormented with these intolerable nuisances. Finally I decided to open up the washer and see if I could find anything there to cause the trouble. We found it literally lined with lime and dirt and took out not less than a gallon of this mixture, then gave the machine a good sandpapering, put it together again, and since that time have had no trouble along this line. T. H. BRADEN.

TROUBLE WITH GRAY LINT.

Editor National Laundry Journal:

I have been greatly troubled of late with gray lint between the ply of collars and cuffs, especially in old collars and wing points. I will give my formula for open criticism and hope some one in the business will take it up.

To a 100-shirt washer, let goods run thirty minutes in warm suds, run off, let on hot suds and run forty minutes, putting in four quarts of bleach immediately after suds rise; turn on steam and leave it on through entire suds, which brings to the boiling point when ready to run off. Two hot rinses of five minutes each; next hot water; thoroughly dissolve in a pail of hot water three and one-half ounces oxalic acid, and let run fifteen minutes; lukewarm rinse five minutes; blue in cold rinse five minutes.

Bleach formula: Thirty-gallon jar, ten pounds lime well crushed to a paste; run in water, and add six pounds caustic soda. Stir well and let settle.

Soap: 120-gallon tank, fifty pounds borax chips, six pounds caustic soda. A SUBSCRIBER.

OPINION AS TO CAUSE AND REMEDY.

Editor National Laundry Journal:

I am of the opinion that the "gray lint" "Subscriber" spoke of is not lint at all, but simply soap specks.

I do not agree with him on his washing formula. I do not see his object in bleaching forty minutes in the second suds. I think he makes a mistake in bleaching in the entire length of the second suds, because in the first place the clothes are not perfectly clean, and as I understand bleach, it whitens the clothes, takes out stains, etc. The bleach can not do this satisfactorily until the clothes are perfectly washed. Second, the suds are not hot enough to extract the chlorine, consequently it does very little good to put in bleach on the start of the second suds, but if he will run the second suds thirty minutes at about 180 degrees F., then add the bleach, heating up the suds to about 200 degrees F., run twenty minutes, turning on the steam the last five minutes, so as to bring it to the boiling point, or 212 degrees F., he would find had anything to do with starting in on a paid-up capital that his clothes would be perfectly bleached. But the bleach formula that he gives is not right for bleaching in the suds; it would do very well for bleaching separately, but it is too hard to bleach successfully in the suds.

If he will take a tub of soft water and make a good suds, using lots of soap, and then add one grain of sulphate of lime, he will notice how quickly the suds begin to fall; and if he had clothes in this water such as collars and cuffs he would notice that between the plys would be that same "gray lint." The sulphate of lime having turned the suds or lather into a hard suds, and the soap that was in between the plys of the collars would not rinse out after it got hard, consequently you have soap specks in the corners of the collars. Hard bleach works the same way as sulphate of lime, only in a milder form, hence your soap specks. I do not believe in using caustic soda in the bleach at all. Bleach softened with caustic soda is inferior to that softened with soda ash.

As for the soap formula, I do not think much of it. This is the formula I use and since I began using it I have had no trouble with either soap specks or dirty wristbands: For fifty pounds soap, five pounds caustic soda, fifteen pounds soda ash, 150 gallons of water.

J. H. F.

* * * *

Editor National Laundry Journal:

Replying to the article by "Subscriber," will say: Upon examining his method I would suggest—vice-versa—be careful to have just enough cold water at first to thoroughly soak the goods, say about four inches in the cylinder. Let them run a few minutes; add soap; then gradually warm so as to bear the hand comfortably;

forty minutes first suds, giving a chance for the stain and gray dirt to soak. Second warm water; use about one-half the quantity of bleach, then add your soap, being sure that you have enough for a good suds; now your steam, and boil thirty minutes, bringing to a boil gradually; watch closely; in case not enough soap, add a little more in ten or fifteen minutes; first hot rinse; second, hot and cold; third, moderately hot; three and one-half ounces acid in about the quantity of water you would use for a suds; let run fifteen minutes; at the end of this time leave the sour water on, and add plenty of hot and cold water; if possible, swim the clothing; put your bluing in; let run at least five minutes; afterward give them a good cold rinse.

It depends a good deal on the water as to the quantity of bleach and sour to use; if the water is hard, more bleach and not so much sour; contrary the opposite. You will always have a nice, clear and substantial color and the heat will not fade it out. Very respectfully,

S. G. F.

* * * *

Editor National Laundry Journal:

I have been having some trouble with lint on the shirt bosoms, and I can not find where it comes from. It is on the shirts before they leave the washer. I have picked shirts out of the washer and found it on them. I have a filter, my reserve tanks are covered, and I don't see where it comes from. I rinse the collar and cuff cloths every morning in warm water. We wash the colored shirts first before we wash the white. F. X. S.

[The lint no doubt comes from other goods being washed in the same machine. In small laundries it is not always practical to reserve a machine exclusively for shirts, collars and cuffs, but, where possible, it should be done. Large laundries frequently reserve a machine specially for collars.]

* * * *

As to the gray lint in collars and cuffs, I think "Subscriber's" formula pretty strong. If my formula will help him he is welcome to it. I will say, though, that we have lake water for laundering and it is very hard.

First—Run in cold water five minutes, and run off.

Second—Run in cold water to about one and one-half inches in gauge glass, add soap for a lively suds, turn on steam, run half an hour, discharge.

Third—Warm rinse ten minutes.

Fourth—Hot water to show one and one-half inch in gauge, turn on steam. Add two quarts bleach, and run thirty minutes. Discharge.

Fifth—Two hot rinses of ten minutes, then cold water until cold enough to blue. In last cold water add four ounces of acetic acid (5 per cent) or eight ounces of acetic acid No. 8. Blue to suit. If the goods have the right color they will be a very pale bluish white. Place in extractor, shirts five minutes (this must be a mistake), collars and cuffs ten to fifteen minutes. Respectfully yours, ERIEITE.

* * * *

In reply to the laundryman who had trouble with lint, will say: We had the same trouble some time ago. We had an agent who shipped every other week and in every load that his goods went in with we had trouble with lint, not only bosoms, but the bodies also, inside and out. We almost gave up in despair, and thought for a finale we would go to the marking room, as all other efforts to find the trouble had failed. When our agent's goods arrived again we examined every shirt, inside and out, and found the trouble came from one white shirt that must have been worn over a coarse blue flannel shirt (of the hog hair and briars grade), and the inside of that white shirt was a sight. We turned it wrong side out and brushed the lint off with a whisk broom, put the shirt in as usual, and our trouble with lint was at an end.

ADVANCEMENT.

* * * *

If the correspondent who is having trouble with lint on shirt fronts will avoid using the same washer for cotton or woolen underwear that he washes shirts, collars and cuffs in he will soon find out where the difficulty lies. Separate washers should always be used for different classes of goods. The great trouble with some laundrymen is they think one washer will answer the purpose of washing all kinds of goods; and if that washer has a wooden cylinder, they can not help but have trouble, as it is very difficult to keep them clean. An up-to-date laundry will always have separate washers for white goods (shirts, collars and cuffs) and at least one other for underwear and family work. Yours truly,

BIG A-LITTLE A.

HOW HE MAKES AND USES SOAP, BLEACH AND BLUE.

Editor National Laundry Journal:

I notice that some laundrymen often have complaints to make about their work in different departments, and thought a few suggestions might not go amiss if you saw fit to publish them.

I am the engineer, marker, assorter, bundler and washer and make all the soap and bleach in the plant where employed. Have done this for the past twelve years.

I have a soap tank that holds about sixty gallons. I put in it ninety pounds of tallow, thirty pounds caustic soda and enough water to cover it about four inches, then turn on the steam and let it cook until all is dissolved. Then I add more water, say, to cover it two inches, and let it cook about an hour, or until I have about forty gallons altogether in the tank. I then let this boil four hours longer and get the finest kind of soap for laundry purposes. It looks like a dark isinglass. It will look black while boiling, but that clears up. I have a small tank at the washer in which I dilute the soap until it is fit for the work.

I make my bleach every morning in a five gallon jar. I put in four ounces of chloride of lime and four ounces caustic soda to every gallon of water; and then I have it right. I run the clothes five minutes in cold water, turn off; and run in water for suds, warm, and add soap with two quarts of the bleach. Turn on steam slowly and run thirty minutes; run off and turn on hot water; run off and turn on hot water; add more soap and one quart of the bleach; run in good hot water for fifteen minutes longer; turn off and run in cold water enough to fill the glass two inches; run off; then two more cold rinses with plenty of water. Then turn on hot water until the washer is full; add bluing and run for five minutes; run off, and fill the machine again with cold water for a few minutes. In this manner I get a nice clean and white batch.

I mix my blue as follows: One ounce of aniline to two gallons of water, condensed. I bring the water to a boil before I add the bluing. Stir well for five minutes, take off and let cool for twelve hours; then add eight ounces of acetic acid and it is ready for use. That and my soap are always O. K. E. B. S.

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Criticising the above washing process a Chicago laundryman remarks that while there is little doubt but what good work is turned out thereby, as is claimed, quite as good could be obtained by omitting the bleach from the first suds and using it only in the second; even if less quantity is used in the second than "E. B. S." says he uses in both. The reason given is that the clothes are then in a more cleanly state, more susceptible to the bleach, and there is full time during the second suds bath for sufficient and effective bleaching.

"E. B. S." makes no mention of boiling the goods at any stage of the washing process. If it is a fact that he does not boil them we scarcely see how he can do excellent work, and we are confident that with proper boiling, and by using hot water instead of cold, for rinsing, the work could be improved.

HOT WATER A NECESSITY FOR GOOD WASHING.

Editor National Laundry Journal:

I use five hot rinses before the sour, and five hot rinses after the sour. I am a great believer in hot water, and, as I have plenty of it at my command, I make good use of it.

I notice "Canadian" wants to know if oxalic acid is injurious to white goods. It is, if not used with proper judgment. I use about five ounces to one hundred white shirts, but all of the soap and bleach is rinsed out before the oxalic goes in. This must be done or you will have trouble in the way of yellow edges and a very poorly blued load. Then come the five hot rinses to get your oxalic out of the goods, and they are then in good shape for bluing. Hot water does it all. It leaves the goods with a nice soft finish, and not a harsh one. Oxalic used in the above form will not injure the goods any more than acetic or sulphuric acid, or anything that may be used as a sour.

Oxalic, again, acts well with chloride of lime bleach, which I use. I make my own bleach, with equal parts of lime and sal soda, one pound of each to two gallons of water; using one quart of this fluid to twenty shirts, or five quarts to a load of one hundred shirts.

In making this bleach I pound the soda rather fine and mix it with chloride of lime; then pour on water to the amount stated above, and stir several times; let settle over night; strain twice through two thicknesses of cheese cloth; put in carboy and keep well corked. I do not make it up in large quantities, as it loses its strength if kept too long.

I hope I have made everything plain so some of the beginners can understand it. There is no school like experience, but at the same time a point here and there goes a good ways sometimes, for I have often found it so myself in my seven years' experience in the laundry.

H. E. B.

THE USE OF ALKALIES IN THE WASHING PROCESS.

Editor National Laundry Journal:

The seeming indifference on the part of the average laundryman to the effect of alkalies used in the washing process has been the cause of much surprise to the writer. There are, of course, numbers of washmen who do not know the difference between an acid and an alkali and who are ignorant of the effect of either.

"A Subscriber" asks for information, and incidentally gives his own formula; not only his modus operandi, but also tells how he makes his bleach, soap, etc. In making his bleach he uses thirty gallons of water, ten pounds of lime and six pounds of caustic soda. To a hundred-shirt washer he uses four quarts of this mixture. In the proportion as made, four quarts of the bleach will contain 3 1-5 ounces of the raw caustic. It is safe to say that he will use two gallons of the soap mixture to each suds and in the proportion mixed he will use 1 3-5 ozs. more caustic soda. In other words, every time he washes 100 shirts or thereabouts he uses 4 4-5 ounces of raw caustic soda on the clothes—something over a quarter of a pound.

It is customary to place the blame for rotted shirts, collars and cuffs upon the bleach—chloride of lime—or upon the acid used in the souring process, yet the use of sodas, potashes and other caustic alkalies, free and uncombined, is responsible for more damaged goods than either lime or acid.

A great many laundrymen try to wash without bleach or to reduce the amount used to a minimum and will hold up their hands in horror at the suggestion of "oxalic acid," yet permit their washmen free use of caustic soda, caustic potash, monohydrate sodium, and other raw alkalies, corrosive or burning in their nature. Some add the alkalies to their soap, others use them in rinse water or in making up their lime bleach.

Now, let us see what different well known authorities say about alkalies and their effect. Under the head of alkalies we have sodas, potashes, in their various forms, borax, ammonia, etc.

"Solutions of alkalies exert a caustic, or corrosive action on vegetable and animal substances."—Encyclopædia Britannica.

"Alkali has corrosive action on animal and vegetable tissue."—Century Dictionary.

"Aqueous solutions of the alkalies act corrosively on animal and vegetable substances and also alter the tint of many coloring matters."—Standard Dictionary.

The above quotations are taken from authorities that can be readily consulted by any laundryman and are found under the head of "Alkalies." "Corrosive" is defined as "eating away by degrees." So in plain, everyday language we find that alkalies dissolved in water have an "eating away by degrees" effect when used on animal or vegetable substances.

The writer has heard some laundryman say, "Oh, I wouldn't use caustic soda, I use caustic potash." See what is said about caustic potash. Quoting from Wurtz's Chemistry, page 299: "Potassium hydrate, or caustic potash, is very caustic. It softens and destroys the skin and for this purpose is employed in surgery as a caustic. It manifests the properties of an alkali in the highest degree; these are its solubility in water, its power to neutralize acids and decompose a great number of metallic solutions and its corrosive action on the tissues." On page 151 of the same authority, we find "An aqueous solution of ammonia, called volatile alkali and spirits of hartshorn, is caustic."

Besides making the fiber of linen or cotton tender, alkalies tend to yellow the goods washed. Ask a woman what will happen if she puts too much baking soda in the tea biscuits. She will tell you that they will be yellow when baked. The effect of alkalies on the clothes is just exactly the same, making the use of more bleach and acid necessary to bring the clothes back to a state of whiteness than need be used if the goods were left white after the suds. Nor is it the addition of soda or potash to the soap that alone rots the linen. A soap, made with a large amount of caustics, improperly combined will have exactly the same effect although not so soon.

The usual reasons given for the use of raw alkalies, either alone or added to the soap, are, that they soften the water, save soap, and clean the clothes quicker. Granted that these reasons are good ones they produce the results at the expense of the customer's linen. If alkalies must be used to soften water, the softening should be done in tanks, allowing the alkalies to precipitate the hardening salts and the water can then be drawn off from above that precipitate. Raw alkalies should never be used to soften water directly in the process.

Try this for an experiment. Take an ounce of oxalic acid and dissolve it in a four-ounce bottle of water. Then take an ounce of caustic soda and dissolve it in another four-ounce bottle of water. Both of these solutions will be many times the strength used by even the most reckless, but they answer the purpose of showing the effect of the two chemicals. In each bottle place a small piece of new bleached muslin or linen, and leave them there for a few days. The one that is in the acid will remain perfectly white and when taken out of the bottle from time to time will be found to be as strong as when put in. But not so with the piece in the caustic soda. You will find that it begins to get yellow and it will finally become so tender that you will be unable to lift it from the bottle; the piece in the acid remaining in its original strength. This shows the corrosive, or eating effect of the alkali and what you have done in a few days is done slowly by repeatedly using weaker solutions of strong alkalies on the same shirt, collar and cuffs.

The writer is not advising the use of oxalic acid, particularly, but simply uses the illustration to show that the effect of it on the clothes is not nearly as great as the effect of the alkalies in common use in nearly every laundry. Oxalic acid makes a good sour and if well rinsed out is not as destructive as caustic potash, caustic soda, etc. Of course, the goods should have a couple of good hot rinses after souring with oxalic acid as permitting the acid to dry in the goods is where the danger in its use exists. In the process, the acid has done no harm whereas the alkali has and no amount of rinsing overcomes what has already taken place.

A good soap needs no strengthener. If a soap won't wash clean without having to burn the dirt out by the corrosive effects of alkalies added to it, then the soap is no good. If you bleach after the suds and use chloride of lime bleach, you will need no alkali added to the bleach to soften it. Of course, if you desire to bleach in the suds, the use of some softener is necessary, otherwise you would curdle the soap and produce "black specks." In this case, the use of ordinary carbonate of soda or washing soda is better than the use of the caustic soda, because the action of chlorine on an aqueous solution of an alkali produces another combination known as the hypochlorite of the alkali used as a base and does away with the free state of the caustic. If the bleach is not well made it has all the objections that exist in the case of the raw and uncombined alkalies.

The progressive laundryman will do away with the use of as much raw and uncombined alkali as possible.

A. R. P.

OF A DIFFERENT OPINION.

Editor National Laundry Journal:

I noticed an article by A. R. P. which I consider is very erroneous. He claims that oxalic acid is not injurious to goods. He tells of an experiment where he has placed some muslins, one in a solution of alkali and also one in oxalic acid, and that the muslin in the alkali is "nothing but sediment" and the piece in the acid is as "strong as the day it was put in." Now what he has to say of alkali is true and instructive, but what he says of oxalic acid is misleading and dangerous information. If our friend A. R. P. would continue his experiment and hang his piece of cloth in the dry-room as soon as the piece was dry he could punch his fingers through, and if the acid was strong enough the goods would fall to pieces in the dry-room. It is true what he says of the stuff as far as he goes, oxalic acid is not destructive in a wet state, but as oxalic acid is not a votatile acid when the water drys out the substance of acid remains and the heat causes the erroneous effect.

D. H. BENJAMIN.

ANOTHER TAKES EXCEPTIONS.

Editor National Laundry Journal:

The writer has read with great interest an article in which A. R. P. gives some advice to laundrymen in regard to the use of alkalies in washing.

To my mind, his statements are in many particulars misleading; tending to upset the methods of many who are getting fairly good results, without giving them anything better, or in fact, anything at all upon which to build a new method.

As in the case of "A Subscriber" whom he quotes as asking for information and giving his formula, etc., A. R. P. goes on to demonstrate how much caustic soda "Subscriber" uses, "raw caustic," he calls it. Now, I don't see how "Subscriber," or any other man, can apply raw caustic soda or potash to the goods in any washing process.

In making his solution, he has reduced his raw caustic many times, a great portion of which he has combined with chloride of lime and made a chloride bleach or what is better known as soft bleach. Then on putting it into the machine with a large quantity of water, it is still farther reduced, so am puzzled to see how the terms "raw" and "combined" can be applied.

Now, the test A. R. P. asks us to try, to demonstrate the burning corrosiveness of caustic soda, as compared to the harmlessness of oxalic acid, is unfair to both alkali and acid, inasmuch as oxalic acid is soluble in nine parts of water. (Encyclopædia Brittanica.) If this be true, how can one ounce be dissolved in a four-ounce bottle of water; three ounces of water to one ounce of acid? The alkali is perfectly soluble in water, and at once dissolves the dressing of his new piece of cotton or linen, and attacks the fiber of the goods. The acid, on the contrary, does not act on the new goods because of the dressing which is insoluble in the acid solution.

A laundryman must have a clean, quick wit to wash, partially bleach and obtain a good color.

The quicker these things can be accomplished the better, and what we want is the most simple, economical, effective and safe way to wash goods, turning them out clean and white without injury and in a neutral condition.

I believe in the use of alkalies in reasonable solution, as no one can gainsay the fact that the very solubility of potash and its softening power is an argument in its favor; as any agent that softens and opens the fiber of the goods, releases the dirt or stain; while it is equally true that such a soluble agent is readily removed from the goods in the rinse.

A. R. P. says, "Oxalic acid makes a good sour, and if rinsed out, is not as destructive as caustic potash or caustic soda." What shall we use to rinse out this acid? He allows that permitting the acid to remain in the goods is where the damage exists. Yet we know many laundrymen use aniline blues, and are dependent upon this acid to get their color. How would A. R. P. obtain a color after removing all the acid? If he can do so in the hot rinses, would he then have to put in more acid to get his blue, or would he mix the acid with the blue? In either case, the acid is there, and when it comes to the hot iron to be finished, it will show its destructiveness. I believe everyone agrees that oxalic acid precipitated upon the goods, is insoluble in water. If we use any other agent to remove this precipitate, how shall the color be obtained?

Now a word about acids and acid salts in the starch.

Nearly all the houses that sell starch, have been breaking their necks to get thin boiling starches. We all use them because they accomplish their purpose in the quickest and easiest manner. But I do not think anyone pretends to cheat himself into the belief that they do not rot the goods, or that they are not made thin boiling by acid. I think the progressive laundryman will do away with the use of acid as much as possible, and the first man to put a neutral, thin boiling starch on the market, will be entitled to the blessing of the laundryman as well as the customer. FRANK JOHNSON.

MORE ABOUT ALKALIES FROM A. R. P.

Editor National Laundry Journal:

It has been rather surprising to me that the article you so kindly published over my initials had not been attacked before, as some of the propositions made therein are at variance with the opinions of many laundrymen and I was much gratified to read Mr. Johnson's frank criticism in your last issue.

However, I cannot agree with Mr. Johnson when he says that the discussion as to the use of raw and uncombined alkalies—free alkalies, if you will—does not interest the practical laundryman, for if there is anything that is going to assist the laundry industry in taking its place on the level with other vast industries, it is knowledge of the "chemistry of the wash room" and the proper application of the principles of scientific cleansing.

A word or two, at first, to dispose of Mr. Johnson's criticisms. Of course, I did not mean that "A Subscriber" put the powdered caustic on his clothes, but when I say "raw and uncombined" I mean caustic in a free state, either in an imperfectly saponified piece of soap, in improperly manufactured bleach or used directly in the wheel after being simply dissolved in hot water. The point of the matter when referring to "A Subscriber's" method was that he found it necessary to use over a quarter of a pound of caustic soda, besides that originally used in making the soap he used. I believe this is unnecessary. I believe it is wrong.

My article was not intended to be one urging the use of acids rather than alkalies. I simply made the point about oxalic acid to show that the laundrymen, in many cases are eating their linen by the corrosive effects of the alkalies without showing any apparent fear as to the ultimate effect of such methods, yet are very fearful of oxalic acid, which is not corrosive in its effect on vegetable fiber. A better understanding of the properties of both would be immensely valuable to the wash room in general.

Mr. Johnson says that the "People's Encyclopedia" calls oxalic acid in concentrated solution "a corrosive and irritant poison," but if he will again refer to his authority, he will see that it is speaking of oxalic acid as a poison and as to its effect on animal tissue and not on vegetable fiber. This is a different proposition. Oxalic acid is corrosive in concentrated form and irritant in dilute form on animal tissue but not so on vegetable fiber. On the other hand, alkalies are corrosive on both animal and vegetable substances.

No matter how dilute an alkaline solution, it has its corrosive effect and while it is possible to reduce this effect to a minimum by employing the weaker alkalies, as borax, yet it is better, if possible, to do without any alkali in the free state. This is a broad principle, that, sooner or later, will be recognized in the laundry fraternity.

There are many signs of this recognition now; for example, in a recent issue of the JOURNAL H. N. Domina writes and says he is making a soap using five pounds of caustic soda to twenty pounds of tallow. He says it is a good article, but is of the opinion that it has a tendency to "rot the clothes." Why does it rot the clothes? Because he has a very large amount of raw and uncombined alkali. He has only partial saponification and an excess of alkali is unavoidable. When, therefore, this soap is dissolved in the wash wheel, this excess of alkali not only eats away the dirt by its corroding effects, but it attacks the fabric and rots it.

It would be possible for one to find instances by the hundred where the ordinary wash man is ignorant of the difference between an alkali and an acid even if the owner does know. Not very long ago, I found a highly respected member of our craft putting powdered alum in his suds and then wondering why he had soap specks, due to the fact that the suds curdled. He told me that he had heard that alum softened water, and it was necessary to use a seidlitz powder obtained from the nearest drug store to illustrate the difference between an acid and an alkali, and to show the effect of one upon the other. Another wash man was found mixing his sour in a pail that had been used but a moment before for mixing his bleach. And this is a very common occurrence in the wash room.

Oxalic acid is very soluble in water; hot water dissolving from 25 to 33 per cent of the acid. The two bottles with which the writer made the test spoken of stand before him on his desk. The piece of muslin that was put in the caustic soda is now nothing but sediment at the bottom of the bottle. It has been entirely eaten and destroyed. The piece that was in the acid and is still in the acid and has been in it since February 4 is as strong as the day it was put it. It was taken out the other day by a prominent supply dealer and he had some difficulty in tearing a small slit in it. Try that experiment. It's mighty interesting.

Mr. Johnson seems to accuse me of pulling down some idols of the laundry trade without replacing them with better ones. I am the proud possessor of a fairly good-sized laundry, one of the largest in the state in which I happen to live, and am free to say that in my washing process not a bit of free alkali is used in any form. I use a pure soap, one of the most costly sold. I'd tell Mr. Johnson the name of it were it permissible to advertise in the reading columns of the JOURNAL. This soap requires no building and cleans purely by its solvent action and not by a corrosive or eating action. I use a bleach, the manufacturer of which has been long known to the laundry trade, and when he says a thing most laundrymen regard it as law. So when this manufacturer says that his bleach is free from caustic in a free state and is converted into sodium hypochlorite, which my chemist tells me can be done, then I accept his statement and have never been able to disprove it either by chemistry or by the effects of practical use. So in the washing no free alkalies have been used.

Now, as to using oxalic acid and rinsing it out. We run our sour for five minutes, then add the blue, enough to over blue the work considerably; run that for ten or fifteen minutes, then give the goods two hot and one cold rinse, bringing the blue down to the desired shade. Not all blues would permit doing this, but there are many that will. Any supply dealer has one.

Again, you may sour with oxalic, then run it off and blue in the first rinse water, which may be boiling hot. There will be an ample supply of acid still left to distribute the blue. Then a couple of cold rinses to complete the load.

Still another way: Sour with oxalic acid, run it off. Give a couple of hot rinses, then a cold rinse. The goods not being in a highly alkaline state as when just leaving the suds and bleach will take but a very small amount of acetic acid to mordant or fix the blue.

There are other ways to overcome the objections set forth by Mr. Johnson, but the three given above seem to be enough. I prefer the first way, although I admit that it takes good judgment and much care to get at the right shade.

Very truly yours,

A. R. P.

YELLOWED GOODS.

"Liberty" asks for a remedy for clothes coming from the washer nice and white soon turning yellow, and, after ironing, the bosoms looking grimy. We asked the inquirer to give us his whole process, and here is his reply:

Editor National Laundry Journal:

Gentlemen: You ask me my formula of washing in order to answer my inquiry. Enclosed you will find it as near as I can give it.

Cold rinse, ten minutes; first suds, forty minutes; second suds, twenty minutes; hot rinse, ten minutes; bleach, hot rinse, sour, blue, cold rinse.

Trusting that this may cover your inquiry and help to find a remedy, I remain, yours respectfully,

LIBERTY.

From the brief and meager recital of his "process" we would conclude that time was extremely valuable to the inquirer. If he is as spare of his time in the process of laundering it is not surprising that unsatisfactory results are met with; as it is necessary to devote considerable time and attention to master the many difficulties that confront the ordinary laundryman.

In fathoming such difficulties successfully, it sometimes bothers one when he is right on the spot and can see and examine the material and methods used; but in answering at this distance, with the information at hand we will do the best we can.

We might locate "Liberty's" trouble in one of several causes, but with less brevity than he uses we will say that we believe the trouble is quite as real but not so apparent, when the clothes come from the washer; as the water leaves them the discoloration shows; the bosom being heavier and of somewhat different material, and subjected in ironing, to a greater degree of heat and pressure; the latter being applied for a greater length of time, as well, shows the trouble somewhat differently and more extensively.

HOW TO REMEDY IT.

Editor National Laundry Journal:

The trouble "Liberty" has with clothes turning yellow after they come from the washer nice and white, reminds me of the experience that I had a few years ago when starting a laundry which was supplied with artesian water. The clothes would have a fine appearance when coming from the washer, but would be yellow as gold when dry. I tried more bluing in them but they would turn the same way. Then I took some clothes and washed them in rain water with the same material and found that they did not turn yellow.

After that I took some pieces and washed in artesian water and blued them in rain water, and again found that they would not turn yellow.

This seemed a proof to me that the trouble was in the water. I tried alum in the blue and it did the work; at first I used it in great quantity, but soon learned that four ounces was sufficient for a load of about seventy-five shirts.

Alum will contract the goods and make them feel hard and stiff, and I could never get a uniform color when using it, but it was the only way I knew to keep the clothes from turning yellow while using that artesian water.

B. T. G.

YELLOW STREAKS.

Editor National Laundry Journal:

We send you under separate cover a collar with a yellow stain on it. We have been in business here over seven years and never had anything like it until the past month. It is not on all the collars and cuffs and is worse some days than others. We find it on the end that comes out of the ironing machine last. We have done our best to find out where it comes from. It is on the surface, as you will see, and can be wiped off with a damp rag. We have time and again thoroughly cleaned all our machines and yet it will come on the goods. Our system of washing is as follows: Cold rinse five minutes, hot suds thirty minutes, second suds thirty minutes, warm rinse five minutes, two hot rinses ten minutes each, sour and blue in last rinse and then a ten minute cold rinse. The material for washing is the same that we have used for five years. We are at a loss to understand it and now in despair we come to you, hoping you can give us a solution of the trouble. Respectfully,

Newcomb & Co.

* * * *

The trouble in this case is a discoloration on the ridges of the collar, and by some called yellow edges; the cause appears to be in the dampening, although at this distance we are scarcely prepared to say that it is altogether therein. The goods sent to us with the inquiry bear every evidence of having been dampened too much. The padded roll, however, having become too hard, or the pressure too great, may have contributed.

When goods are dampened too much, the starch therein being soft, the steam caused by the heat of the roll will further soften it, and the pressure force it out to the surface; this, as we said, is contributed to by the padded roll having become too hard, or the pressure too great. The pressure crowds this softened starch toward the end of the collar. If there should have been any surplus starch left on the surface of the collar originally, of course the trouble is worse, but under the conditions above described, the starch from the inside will soften, be forced out, and burn or scorch on the surface.

BUSINESS SUCCESS.

What is success? Who are successful men? What qualities of mind are essential to prosperity? We all want to be successful. Some of us attain a real substantial success, and yet look on our lives as failures, because we have fallen below the ideal of our youthful ambition. Few of us have reached the heights we fain would climb, but we must not for that reason hurriedly and rashly conclude that our lives are failures. Any man who builds up a large business by honorable methods can be considered as succeeding in life, although he may not dig the gold out of the rainbow pots of his earlier years.—American Artisan.

WHY A SUCCESSFUL LAUNDRYMAN CAN MAKE A SUCCESS AT ANYTHING.

T. L. METCALFE, HOPKINSVILLE.

I think much can be said about progressiveness in our chosen profession, so I have selected this subject on which to make a few remarks. There are few, if any, drones to be found in the laundry business. One will either go forward or backward and there is at all times so much to contend with that he is more apt to go backward than forward unless he has the grit and determination to overcome every obstacle.

There is no line of business that has more varied departments to be looked after, any one of which depends on something either preceding or succeeding, for its success. For instance, the gathering up of laundry, and the marking and assorting. Then comes the first and really most important branch of our business, that of washing. And what does it profit a laundryman if he does all the other things well and neglects this first step? We must have, as all know, pure water and supplies the best, and then if we have obtained good results in the wash room we have built a good foundation and are ready for the next important step, that of starching and drying. This, in my judgment, is a department which requires the most vigilant care and attention, for with good ironing machinery you can get good results if your goods are properly starched and dried.

After washing, starching and drying, comes dampening. Here is a very important step. The goods should be well washed, run in the extractor a sufficient length of time, starched and dried so as to be delivered to the dampener with desired stiffness. If not damp enough, they will iron up rough dry. The goods will neither be stiff nor smooth. Then on the other hand, if made too damp they will blister, besides lose their stiffness. I have found in my experience that when dampening is done by machines twice as many shirts can be ironed on body ironers as when dampened by hand.

Next in order is the ironing process, which has to be looked after very closely, for we all know what a partially heated or too hot iron will do for us; also about goods that are not straightened out and stretched before ironing. Then the finishing and folding is no small job for if the goods are not properly finished and folded they present a very shabby appearance.

After you have followed them closely through the entire process of laundering, your goods are oftentimes so crushed in being wrapped that much damage is done them. I have shirts, collars and cuffs all wrapped in one package. I never have my package rolled; always have the paper torn sufficiently large to lap from two to four inches, folded over the goods from either side and tied around firmly in center to prevent slipping, before folding the ends. By this method of wrapping I save paper and get better packages, for when the bundler is allowed to roll packages he will use at least one-third more paper, besides crush the goods.

After this comes the checking and shipping or delivering, of which each laundry has its own system.

I go over these various departments to show the intricacy of the business and I can but think a successful laundryman can fill most any position in life that requires business ability, for nine-tenths of the mercantile pursuits do not require as close attention and the executive ability that the laundry business does.

A LAUNDRY OLIVE BRANCH.

A correspondent in the London Laundry Journal hits the nail in the following stories:

"Waiting in the office of a large West End laundry, there entered a venerable gentleman in the smartest get up. The affectations of his manners made me wonder if he held a position in the firm, and I boldly asked, 'Friend, what position do you hold in the laundry?' He answered, with a most gracious bow, 'I am the Olive Branch!' 'The what?' 'I mean the Olive Branch of the laundry. We have frequent complaints from our customers. The ball robes and children's things are sometimes done up unsatisfactorily. Our dressing of the ladies' and gentlemen's linen and the household goods not pleasing others; while the claims for damaged articles and shirts is often a heavy item in the business. Now, wherever there is a complaint, or a claim, it is my duty to see to it so that I am able to keep the work and reconcile the customers. My age is 75, and up till now I have had every success as the Laundry Olive Branch.' This I would readily believe from his gentle talk and a diplomatic manner. This is a quill for the consideration of laundrymen.

* * * *

Here is the other side of the picture.

I entered another large West End laundry, whose proprietor had a valuable contract with one of the largest and most fashionable hotels. "Come in," was the invitation I had from the owner of the laundry. "I am in a hole. I do the work for the —— hotel. Among the recent visitors were a party of Americans who had come from Paris. Their clothing was really sumptuous—most superior linen and stylish silks. The silks included six pairs of spun combinations, all different colors. My wife and the silk washer attended to these specially, each article being washed separately. When five had been put through, they were carefully examined and found to have small holes in them, the texture going to pieces. When dried they showed up worse. I consulted a neighbor as to the cause of the serious damage. He said the articles had been cleaned in Paris by the chemical dye cleaning process, so that when they were placed in the suds the effect was to destroy the fiber. We returned the articles (doing nothing to the sixth one) with a special note to the hotel steward and linen maid to explain the position to the American ladies. The ladies' maid was not at hand when the linen maid placed the parcel in the bedroom. When the owner of the silks came into the room, seeing the parcel, she opened it and examined the contents. Horror! Ructions! Bells! The lady's maid, linen woman, the steward and stewardess had a hot five minutes' talk from the fair American." Results: A special messenger sent in a cab to fetch the laundress to explain. My friend made a not very wise move in sending his wife to "explain" and handing her a blank signed check. The wife returned after explaining, having filled in the check for £22 10s, with the object of retaining the hotel work, and rather than have a legal case she took this expensive method of holding out the olive branch. There is a moral for you.

CORRESPONDENCE OF THE LAUNDRY.

(Written expressly for the National Laundry Journal.)

While most of the business relations of laundrymen with customers are carried on orally, there is always more or less correspondence. As laundries vary in size, their methods of doing business are subject, of course, to like differences; and it is often difficult to suggest opportunities for improvement without adapting them to individual cases.

The correspondence of a business establishment is as much a part of its work as any single department of its working organization, and it should be treated at all times as such. It should never be forgotten in this connection that it is one of the best indexes of character, capabilities and habits, which the one to whom another is writing has access to, in instances where the two have never personally met.

The old adage to the effect that "clothes make the man" is familiar enough. In this event we may be pardoned for coining a new adage to the effect that "correspondence marks the man." The mail service, swift, cheap and reliable, has made possible a careful study of one's correspondent, which may yield almost as correct an opinion of him as a short interview or limited personal acquaintance.

The man who, without reasonable excuse, neglects to answer an ordinary business letter would probably prove a rather indifferent friend; while the person whose correspondence satisfies all the requirements of promptness, and which shows careful and intelligent consideration of the matter under discussion, would probably be found equally responsive and agreeable were the transaction carried on face to face.

Neatness is a twin brother to promptness in correspondence, and may be an even better index to one's methods and habits. The difference between a neat and a slovenly written letter may often show the wide gulf between exact and slipshod methods, and to the careful observer this means much. Least of all can one who seeks to buy anything on credit afford to let the letter requesting such privileges or accommodation bear the least imprint of carelessness and haste.

Not long ago a certain manufacturer of laundry machinery was heard to say that he imagined that he could partially describe the appearance of a laundryman's establishment, and tell how customers were satisfied therein, by a careful study of a few of his letters. While this may be an extreme phase of the matter, and not always a reliable index, it is beyond doubt that business men generally pay more attention to the character of their correspondent's letters than is ordinarily supposed. One sees the man or the establishment, not the letter; and hears the writer speak while he reads his note.

This should be the ideal of the correspondence of every laundryman; in which case his letters will be prompt in getting under way, bear all evidences of carefulness and neatness, and help in the branding of him as an up-to-date, honest and ambitious man of affairs.

Office Assistant.

A GOOD IDEA.

Editor National Laundry Journal:

There is one thing that seems lacking in most laundry offices, and that is facilities for a light toilet. Some laundries may have adopted it, but it could be used to advantage many times by nearly all. I refer to having in a convenient but retired corner of the office a good mirror, combs and brushes; a good clean wash bowl and pitcher (providing you have no stationary washstand); clean towels, plenty of them, for the use of customers who drop in the office and perhaps have soiled hands, or desire to change their collar or cuffs. We have one in our office and it is surprising how often it is used, and the remarks that are made about it, even by many ladies who take advantage of it. It don't take long for your customers to find it out and when they do they come in oftener. Ladies particularly like it—the mirror at least—and seldom fail to take a look at themselves when in the office. DOCK.

A SUCCESSFUL ENTERTAINER.

While we do not advocate the premeditation of delays, we must admit that they are sure to occur at times, and an astonishingly effective entertainer for the delayed customer in a laundry office is a piece of card board hung with a neat ribbon, over the desk or counter, where it will come directly before the eyes of the impatient customer, and on which you have pasted clippings of bright bits of humor and interesting matters.

We have known of cases where the utmost impatience had been shown because of having to wait a moment, and after becoming interested, the customer has remained five or ten minutes after receiving the package, to read the matter.

IT OILS THE WHEELS.

A happy disposition is about the best qualification one can have for a business life. Friction is constantly arising in a store and there are plenty of customers who are aggravating and provoke a salesman to anger. A touchy person behind the counter will suffer from the countless stings of the business and will make things uncomfortable for everybody. What is wanted is oil for the troubled waters, a mind slow to take offense and a soothing manner to calm down the peppery visitor and make a friend of him. Tact beats talent in that race.—Men's Outfitter.

AN OLD GAME.

A well dressed young man entered and asked for a $20 bill, which he said he wanted to send away in a letter. Then he produced a number of small bills to exchange for the $20. It was an old game, but the young lady cashier had never heard of it, and she produced the $20 bill. The stranger placed it in an addressed and stamped envelope and had it sealed when the cashier discovered there were only $18 in the money he had given her. The stranger apologized, said he would go and get the other $2, that he had made a mistake, and for her to keep the envelope in which he had placed the $20 bill, until he returned. Then he took his own money and departed. When he did not return the envelope was opened and found to contain a dollar bill.—Pittsburg Dispatch.

SYSTEM OF KEEPING ACCOUNTS IN A LAUNDRY.

GEO. P. DEUSER, LOUISVILLE.

I believe this is the most important part of the laundry business where a credit business is done. I have arranged a ledger in which we enter our work as in a regulation laundry record, using numbers from 1 to 9999. Our monthly customers are so arranged that the majority of them let us call for their work on Monday and Tuesday. Our drivers, in delivering, use two books; the one they use today is left at the office tomorrow; it is checked up, all the monthly customers' accounts being charged directly in the ledger; when the last of the month comes around all there is to do is to make out statements, or if any one calls during the month we are able to give them the exact amount of their account to date. For credit customers who pay weekly or every two weeks we use a small ledger indexed all the way through. We hold our drivers responsible for all such accounts and if not paid within thirty days from date of delivery we credit the account and deduct it from the driver's salary. We pay our drivers all the same amount, $9 per week. We have no collector, our drivers doing all the collecting.

GOOD OFFICE SYSTEM.

ESSAY BY J. A. BARKEY, CHICAGO.

(Read at Convention, L. N. A. St. Louis, Mo., Oct., 1899.)

For constant exertion at a laborious task, where a vast amount of both mental and physical application is necessary, with the hope of accomplishing the most desirable results, one should be in a healthful and vigorous condition, and should likewise use every effort to maintain that condition.

When man meets with physical obstructions—a barrier that would seem unsurmountable by physical force; when his hands are tied, as it were, and he appears to be at the limit of possible accomplishment, the head frequently solves the question and provides ways and means to overcome that which theretofore has been abandoned as among the impossibilities. Did the hands or physical force ever accomplish such results when the head was found to be in a like difficulty?

A capable and well-trained head, with healthy body, strong limbs and willing hands, is all desirable and to a degree essential, but frequently the capable and well-trained head will accomplish great results when the body may be a physical wreck, or one or more of the limbs useless or entirely lost; and in rare cases, no doubt, will and can do so, and has done so, when hands and limbs have all been lost. The head has provided artificial limbs that are effective and useful, but the combined efforts of all the hands, limbs and heads in the world are insufficient to produce an artificial head that will fill the bill in any sense or measure.

The business concern of the present day and the near-at-hand twentieth century needs a capable, well-trained head to meet the demands, if it will prove successful. A healthy body, strong limbs and willing hands are likewise requisite; but the primary provision is the head. The laundry is no exception. In this respect it represents a human body. The office represents the head, and here should be contrived, thought out and arranged all the plans and methods, all the details of the business, for execution by the different departments and the hands employed therein, which departments and hands represent the limbs and members of the complete body of the concern.

A perfect office system should be so thoroughly arranged that the directions for the execution of the minutest details of the business should emanate therefrom, and the knowledge of its proper execution or its failure to be executed, with reasons for the latter, should be accessible to the office at all times. These directions and returns therefrom should, as a matter of course, go through the proper heads of departments, and thus down to the individual or individuals who are to execute the work or business, and the returns should come back through the same channel to the office. A laundry office thus would not be, and it should not be, simply a place where patrons could leave and get their packages, nor simply a place for the convenience of the public doing business with the laundry, but it should be a place where all the business of the concern is done, from whence emanate all primary orders concerning the business, from whence the direction, guidance and control of the entire business should be had.

An office system for the control of business on the lines of the foregoing is, perhaps, not what the majority of those present are expecting at this time, nor what they deem advisable to put in practice at present, and there may be places and cases where the laundry business will be fairly successful for a long time if managed on the old lines; but my prediction is that the great bulk of the laundry business of the future will be done in laundries where mind, not muscle, will control. And the success of the same will depend largely on the system by which that control is had.

What the average laundryman of today needs is a system that is accurate and complete without involving too great an expense in the clerical force to maintain it, which can be accomplished if the proper system is adopted and strictly adhered to in every detail.

Now, let us commence at the beginning and see where we can improve on the system now in use and install one more complete without any material additional expense. The first to be taken into consideration is our customers (who are the "stock in trade" of every laundry), and must be taken care of in a proper and systematic manner, which is not by letting the driver carry the route in his head. The correct name and address of each new customer should be turned into the office promptly by the drivers, and by the use of the route card system you will have your "stock in trade" under lock and key and free from loss by fire or theft if your safe is large enough to hold it.

The route card system, which is now in use by many of our laundries, has many advantages over the old way of keeping them in a book, which soon becomes lumbered up and frequently requires rewriting. One of the most important features in this system is that the card can contain all information, such as the customer's mark, whether a monthly account or C. O. D., hand work, domestic or gloss finish, etc., which is stamped on the list weekly. These cards should be arranged into the driver's trips and in the order that the calls are made each week, and the lists for the driver (which he takes with him when collecting the laundry) be written up in the laundry in ink, being written in ink denotes at all times that it is a regular customer for which you have a route card.

All lists on which the driver did not get a bundle are to be returned to the office with reason written on the back why bundle was not received, etc., and these lists can be used again in making out the trip for the following week, except in cases where you have lost the customer, when the route card is at once taken out and the customer either called upon personally or written a good strong letter. Thus you will see by this system properly adhered to you keep in close touch with your before-mentioned "stock in trade."

In reference to this route card system, I might relate a circumstance that once happened to a driver of a certain Chicago laundry which did not have this mode of keeping track of its customers. This driver carried the routes in his head, and he had one customer that he had been calling on for some time, but had never paid any attention to the number of the house; he recognized it by a certain color of paint; unfortunately for him, one week between his calls they painted the house another color, and he lost the customer for four weeks. This I give to you as a fact, the driver having told it to me himself.

We now have the bundle in the laundry, with the list previously made out in the office, as before stated, written in ink, containing the correct name and address, mark and all other necessary information, which will certainly facilitate matters in the marking room and obviate the chances of mistakes, such as giving the customer a new mark or overlooking the fact that he wished to have his work done by hand and the points of his collars not turned. The time saved in the marking room alone will offset the time spent in writing up the trips, to say nothing of the correctness of the operation.

The lists have now gone to the office to be footed, dated, stamped and booked, and there is no trouble in separating the monthly accounts from the collects, owing to the fact of that information having been stamped on list when being made out from the route card. In recording the list it is necessary only to use the name, driver's number or letter and the amount, filling out the coupon and adding thereto the line number in the record book. There should be no record kept of the articles contained on list, but when a claim is made, insist upon the return of the list, which is the original and preferable to a transcribed copy. The monthly customers are charged in the ledger and the balance due added to the amount on list (in ink) for three reasons. First, it is a check on the drivers on holding out monthly account collections; second, the driver has a statement of the account with him on each bundle, and the customer can't give him the old song and dance of "if you had the amount of my account with you I would pay it"; third, when the customer allows his account to run he sees his indebtedness staring him in the face each week, and it has a tendency to make him pay up oftener, especially if he is living in a "fashionable boarding-house" and the package is left on the hall tree, where all his fellow boarders can size up the amount he owes his laundryman.

The lists have now gone to the bundling room, the goods are sorted, tied up and ready for delivery, each driver taking his bundles out without the trouble of booking, calling back, etc., as we have a record already of the bundle and of the driver to whom it belongs. When delivery is made and cash received the coupon is torn off and is turned into the office each night with cash to balance same.

The coupons are then checked back on the record book, which shows at the end of each week the number of collect bundles that were left without the money, and by whom left. A list of these outstanding balances can be taken off the record book every so often and the drivers called to account on any that might be considered ancient.

In cases where collect bundles are not paid for at time of delivery the coupon is also torn off, which the driver arranges after each delivery in the order in which his calls are made, and are used on his next trip over that route as a reminder of those who owe him balances. The driver should be held responsible on these accounts all over and above one bundle, he being allowed a leeway of one bundle.

The collection of accounts is something that causes many a laundryman loss of sleep, but it shouldn't in any office working under a thorough system. It should not be necessary to have a collector in the average-sized business, but if you find it is, don't try to do it yourself, as you are a poor collector and easily put off, and you will not take the "back talk" that your "hired man" will, as he knows he is paid to take it. Do your collecting through your drivers, and if you have the right kind of men and make it an object for them to get the money, you will no doubt find in a short time you will not need a collector.

I believe the best plan is to pay drivers a certain salary and a percentage on cash turned in, and if your cash receipts do not increase, there is a lack of interest, and you had better change drivers. Eight dollars (8) a week and 5 per cent of cash collections has increased the salary of our drivers from an average of $11 to $13.50 a week.

Now we have been clear down the line from the time we received the customer's call until we returned the bundle and got our money for it, but that is not all; we have the little claim for shortage to adjust, which cuts no small figure in the average laundry of today. Let us see how we will handle it.

Don't let the driver come in and tell you his troubles, but have a blank form for claims for him to fill out, giving you all information obtained on the case, such as if they got all the list called for, size, color and kind of article claimed short. After you have received the claim in proper shape investigate it promptly and inform the driver of your decision in the matter and let it be final, even though it may cost the loss of a customer occasionally.

If at the end of each week all articles left over are recorded in a book for the purpose, and the articles then put under lock and key, you will find it will assist you materially in adjusting many claims.

The president: You have heard the very able essay of Mr. Barkey. Have you any questions to ask?

A member: I would like to ask if the driver calls for the bundle and does not get it, what are you going to do with that list? If he is told to call next week, do you make a new list?

Mr. Barkey: As soon as the lists are returned the girl in the office who writes them up stamps the list on the corner if there was no package gotten, and if there is no bundle the next week there is another stamp, and three stamps means a call-down for the driver, unless a reason is given why he didn't get the bundle.

Mr. Walker: We have been using the system that Mr. Barkey describes for ten years, and we shall continue to use it. It is a great help in keeping track of the business.

Mr. Barkey: We have five wagons and about twenty-five hundred customers; and we have a young lady in our office who does all our office work.

Mr. Armstrong: Does she foot up and enter all those lists?

Mr. Barkey: She writes up the lists, stamps them, enters them, checks up with the drivers, receives the money, checks up the record book, and keeps the cash.

Mr. Mathews: I would like to ask if the girl carries forward on the list the amount of the account every time?

Mr. Barkey: Yes, sir; in ink.

The president: I wish to say that Mr. Barkey has brought in his form of books and cards and has kindly consented to show them to members after the session closes.

LAUNDRY BOOKKEEPING.

IF IT IS WORTH DOING AT ALL, IT IS WORTH DOING WELL.

Editor National Laundry Journal:

We are obliged to request some further information on accounts. Your information was much appreciated, but some points are not yet quite clear to us.

First—Regarding work from branch offices and agents. Besides our regular branch offices in outside towns, which send us a regular shipment each week, we have several local barber shops and others who send in bundles strung all along during the week, possibly a dozen packages in each lot; these agents settle, minus the commissions, once each week or month. Now, would you advise copying these lists first into the regular office record book and at the end of week drawing off onto the duplicate agent's book, or would you consider that the agent's book is a full enough record of same without copying into the record book?

Second—Is it rulable to post each individual item that appears in cash book, also to signify that same has been credited either on record or petty ledger; of course, in credits that are entered in our regular ledger, we place the ledger folio in cash book; but is there no way to avoid the tedious posting of cash items other than those charged in ledgers? Those that are paid for on delivery and the charge is only in the record book? That is, in checking up record at end of week, would you advise after all ledger accounts have been drawn off, checking from cash book to record, or vice versa?

Regarding keeping track of packages by numbers mentioned by you, we would ask how high should the numbers be continued? And should the number of the package or list in the record also be placed on list to show that list has been copied; if so, should the driver when delivering such package, besides entering name of patron and amount of package also enter the list number on his cash book?

Hoping you will pardon us for frequent intrusions on your valuable time and space, and thanking you for past information, we beg to remain, Yours very truly,

S. & Son.

For the purpose of keeping a regular weekly account of the business done with any or all branch offices and agencies, without having to transfer all of the items of the same from the general laundry record to a special account in another book, the simple plan is sometimes carried out of giving each branch a separate page or part of a page in the record sufficient to accommodate about the number of packages that they usually send in. Where a system of numbering all packages is in use by the laundry, the numbering for these branches is done as follows:

The branches or agencies are numbered from one up. The numbers for agency No. 1 being 1-1, 1-2, 1-3 and so up to as high as may be desired.

The numbers for branch No. 2 would begin 2-1 and run 2-2, 2-3, etc.

With this plan the numbering would indicate how many packages were done for each agency each week, and the footing of the money column give the total amount. The latter could be posted to a ledger account in a lump sum once every week.

It is a good plan, where the last number of one week is, for instance, 47, to begin numbering for the next week at 51. The idea being to have a number one at the beginning of the account for each week's business.

Where a system of numbering packages is followed, the number should be placed on list and used in all entries and transfers except, perhaps, in the ledger.

Numbers for regular main office and wagon work can be recorded and numbered together, commencing at number one and going as high as desired, or if it is desired to know just what each driver is doing their packages can be recorded on a separate page, and numbered similar to those of the agencies, only designating them as A, B, C, D, etc. Numbering the packages of driver A, A-1, A-2, A-3, etc.; those of driver B, B-1, B-2, B-3, etc., and so extending the letters to suit the number of wagons you run.

It is considered very desirable to check back to the record all cash items, and all items charged in ledger to regular customers. If this is done, and it is desired to know if every package has been properly accounted for, all that is necessary is to take a list of the packages remaining on hand at the end of the week; check them back to the record, and then if the record is not fully checked up, there is an indication of there being something wrong in connection with the packages remaining unchecked; and the error may be traced.

If this list of packages remaining on hand is taken after the close of the week's business, it should be copied in the record previous to beginning the record for the next week's business. It will represent so much work on hand, say $20.

If in the course of the week the record shows that you have done $200 worth of work during the week, making with the amount of work on hand at the first of week a total of $220, then the footing for cash bundles that have gone out, together with the footings of the items charged in your ledger and the amount of your list of packages remaining on hand again at the end of the week should balance; footing up the same, $220; or there is something wrong, and you had better look it up.

Advice cannot be intelligently given as to the extent of bookkeeping advisable in a given business without being somewhat familiar with the circumstances under which said business is being done, but it is a good general practice in any and all business matters to know that matters balance. It is not always sufficient to know that a balance is on the right side, but whether it is as far on that side as it should be, and if not, why not should be definitely known.

EFFICIENT DELIVERY SYSTEM.

(An Essay by A. T. Hagen, of Rochester, N. Y,, at Cincinnati, O., Sept., 1898.)

In 1880 we were doing in our laundry 3,500 shirts per week and other goods in proportion, and did not have a single horse and wagon. We were then doing $450 worth of work over the counter at our main office and had four branches, each of which paid us about $75 per week. This work was delivered in hand carts.

The delivery of the work alone costs in different places, as far as I can learn, from 15 to 30 per cent of the gross amount of work done. This large difference shows that there is quite a field for study as to the economic phase of it.

The men you have to drive your wagons should be carefully chosen. They should be honest and loyal, always anxious to increase your trade.

The wages or commission paid a driver, together with the cost of keeping his horse and wagon, is about $20 a week, so it is best to have him do as little work in the laundry as possible, such as preparing his calls, routes, etc., which can be as well done by a $5 or $6 hand. In some laundries the drivers spend more than a quarter of their time inside, doing what ought to be done for them. In such laundries where they are running four wagons, I claim they could do with three, thus saving about $15 per week, and larger laundries would save in proportion.

We have a book for each driver, laid out in routes for every day in the week. All customers' names and addresses are written in this book with lead pencil in the proper route on the proper day. (The reason we use lead pencil in this book is, when we lose a customer, we erase the name and address from book so all names in book are good live customers.) At any time in the week when the girl in the route room has time, she takes this book and makes out a laundry ticket for each name. These calls are all in rotation and represent driver's first call, second call, etc.

When the driver goes out on Monday, he takes the first call, and if he gets a package the slip is put on the bundle, if he does not get the package, he turns one end of the slip over and writes on the back the reason why. Upon his return to the laundry, he gives to the girl that takes care of his work all packages and return slips. She counts packages and slips, and they must correspond with number of slips taken out. Then she distributes returned slips to their proper places. Thus we hold the girl responsible for any package not called for.

We have a sheet called "Route men's weekly report slip." It has about twenty lines divided into three columns, one column headed "New Customers," one headed "Lost Customers" and one headed "Complaints." Each night each driver must fill out on this sheet name and address of any new customers he has got that day, also name and address of lost customers and the reason why lost. If they have moved, the girl at once gives the name and address to the girl in charge of the route to which he has moved, and she at once enters it in her books and makes it her business to see that his work is called for in regular order.

For all complaints we have a small slip upon which the girl in charge puts name, address and nature of complaint and hands it to the manager of the laundry. He at once goes or sends some one who is competent to adjust the complaint if possible, and writes on bottom of slip how same was disposed of and returns that to the manager. He in turn looks it over and returns it to the girl in charge of route room and if customer is lost for good she at once erases his name from book. We find by this system we save a great many customers that otherwise we would lose.

Your system is not efficient unless you are able to deliver your goods promptly and just when they are wanted. In order to do this they must be put in the laundry according to the system and as you want them to come out.

All the work a driver delivers is marked in his delivery book when he takes it out, and at the end of the week they are added up to see that they tally with the record book, so that we may know that all of it has been delivered.

Each of our drivers has a number and that number is printed on the lists that are put on all the goods he brings in, and each driver's work is kept in a record book by itself. As the bundles come from the sorting room they are placed on shelves according to these numbers, by one of the girls in the route room. When they are all, or nearly all, distributed the girls in the route room begin to prepare these routes for the drivers (each girl doing that work for four drivers). When she has them arranged street by street, according to how the driver delivers it (she becomes familiar with the route as the driver himself), she then enters them in his delivery book, name and address in same rotation, and also puts them in the baskets just as the driver wants them to deliver. This work is done in the forenoon for afternoon delivery, and the same in the afternoon for next morning's delivery, so that all the driver has to do is to take the baskets as he finds them, load them in his wagon, get his change, and he is ready to deliver. Our drivers often have the work loaded and are out on their routes by 7 o'clock in the morning. Each driver has two delivery books used alternately. One is used by the route girl in preparing the next route, while he has the other on the wagon. At the left hand of the page the route girl marks whether it is C. O. D. or a one week charge.

Packages that are marked C. O. D. the driver must get the money for or bring back the package. If he fails to do so it is charged to him and taken out of his next week's pay. At the right hand side of the page she marks in ink the amount of ledger charges, and in another column the amount he is to collect. These are added and marked in ink. In another column the driver marks the amount he collects, or the word "returned" if he has to bring the bundle back. When the driver returns, the route girl checks off all the packages he has to bring back, and signs his book to show she has done so. He then hands his book and money to the bookkeeper, who looks the money over carefully to see if he has made his entries correctly, adds up what he has marked collected, then counts his money, which must tally with what he has marked as collected.

A certain section of the city is allotted to each driver, and no man is allowed to deliver work out of his territory. In case a driver brings in a package from out of his section, it is delivered by the driver in charge of that section.

By adding together the amount paid the drivers, the cost of keeping the horses, repairs on wagons, etc., and dividing by the number of packages delivered, you will find out what it costs per package to deliver your work. I have figured this out for several laundrymen, the lowest being four cents per bundle. Where your customers are located far apart, it does not pay to call for their work if they have small bundles. It appears to us that in large cities small laundries are not warranted in attempting to cover the entire city.

PROPER DELIVERY RIGS.

THEY CAN BE KEPT FINE ECONOMICALLY AND ARE GOOD ADVERTISERS FOR LAUNDRIES.

A neat wagon, well painted and nicely lettered, is one of the best advertisements that a laundryman can put out. It is a fact, though, that however fine the wagon, the same may soon become dull in finish; the glitter of gloss and gold (if gold be used in lettering) and the symmetry of the skill in workmanship soon become lost. This condition, however common, is entirely unnecessary in many cases, and is due wholly to neglect in taking proper care of the vehicle.

A fine wagon should never be kept in the same apartment where the horses are kept; nor in an adjoining apartment, except there be tightly closing doors between the two apartments. The ammonia from the stable seeks and destroys the varnish and fine finish of such vehicles.

For instance, take notice of the fine coaches or carriages that are driven daily about the streets of a city and you will observe that, although they are driven from one end of the year to the other, they, as a rule, always look well. The reason is that they are cared for. A nicely painted vehicle should never be allowed to stand for any length of time with mud on it, but should be washed before the mud is allowed to dry. If not it will be observed that the finish is damaged to some extent on all places where the mud has been allowed to dry.

In addition to keeping such vehicles in a separate apartment, well shut off from the stable, a large cloth cover, which will come down almost to the floor, will be found to afford a great deal of protection from dust, as well as from ammonia and other deterioration. With such care, the finish of a wagon would be in almost as good condition after a year's use as at the beginning, and a slight touching up with a light coat of varnish will be all that is required to make it look as good as it did originally.

The oiling or lubricating of a wagon is a matter that much attention should be given also. As a rule those attending to this duty make two errors: They do not oil frequently enough, and when they do they oil too plentifully. The bearings will contain a certain quantity of oil, and the balance will ooze out at the end of them, discolor the hub and axle, and run down the spokes. When a sufficient quantity of oil is applied an additional amount will not enable the vehicle to run one moment longer or better, and any such additional amount is worse than wasted, as it is only a means of befouling the vehicle and anything that comes in contact with the parts thus befouled.

Where a concern has wagons enough to justify them in keeping a barn man, it will be found advantageous as well as economical to keep one person employed as such, and he should be held responsible for all damages to the vehicle, horses or harness as well, unless he observes the same when the rig comes into the barn and reports it at the office. In order to do this it will be necessary for the barn man to look the whole rig over when it comes in. The driver on taking his wagon out in the morning should inspect it in the same manner in order to see that nothing has befallen it since he brought it in last.

The employing of a barn man will likewise prove beneficial to the horses. They will get fed, watered and groomed more carefully and thoroughly. This is but natural. For instance, a driver gets in late; he is hungry and tired; his horse is too warm to water or feed; so he must be allowed to stand until the driver goes, perhaps to the office, then to supper, and it may be an hour or two before the poor horse gets fed; while a barn man would have had plenty of opportunity to get his own supper at the regular time, and be on hand to care for the horses properly when they come in.

If a laundry has not enough horses and wagons to occupy one's entire time in the barn, there can be found other employment to fill in between meals. For instance, he might haul fuel or freight, wash windows, do a little cleaning, help around the laundry, or take out a rig an hour or two in the middle of the forenoon and afternoon and make short delivery runs, and if one has but two drivers we think it would pay him largely to adopt this plan as far as practical, having one man's time first and foremost for the care of the horses, wagons and harness, and holding him responsible for proper attention to and care of the same.

At some time during each week the wagons and harness should be carefully looked over; all loose bolts on the wagons tightened up; when the tires show signs of looseness they should be reset; and wherever the harness shows that the stitches are beginning to give way it should be restitched at once, however slight the showing. These will be found to be in the class of cases where "a stitch in time saves nine."

HOW IS YOUR CREDIT?

There are a great many engaged in business who are entirely unaware of the nearness of touch in which they are kept by the large commercial houses with which they deal; and of the information that is daily laid on the desks of the managers of said commercial houses. Of those who are somewhat acquainted with these methods by which this information is furnished, but few have either a concise conception of the minute and thorough information thus obtained or its consequences.

In addition to the regular daily sheets reporting business transactions from and to all parts of the commercial world, the dealers and manufacturers in any certain line frequently get from and give to each other little bits of information which taken individually are of but little consequence, but several of which put together and showing relative appearances sometimes lead to grave conclusions and are inclined to reflect on the commercial reliability of those informed on thereby.

For instance, a tradesman recently visited the machinery and supply centers, got prices on large amounts, returned home, and then distributed his orders to different houses, accompanying orders with checks for amounts, asking that the goods be shipped. One of the dealers found the check sent him to be unsigned, and soon thereafter learned that a like circumstance was the experience of another dealer, and then by telephoning found that several of the orders had been accompanied by unsigned checks.

While a conclusion that there was any intention in sending these checks unsigned does not necessarily follow, still human nature is not always charitable enough to firmly believe otherwise, and one who even unintentionally commits such an oversight at once exposes himself to the aforesaid uncharitable element of human nature, and to a liability of consequent damage to, or suspicion of, his reputation for commercial integrity.

Commercial agencies keep a representative of some kind on watch at every point of the commercial world. There is no hamlet so small but what the action of its business men come under their eye. In large cities these agents are well known and keep agency offices, the location of which are also well known; but in smaller places it is necessary for them to have a resident of the place represent them, whose identity for obvious reasons is not always known to the public. Thus transactions of important bearing, whether the transactions themselves be large or small, are brought under the searching eye of these agencies, carefully scrutinized and duly reported to the entire commercial world.

Placing the smallest chattel mortgage, allowing interest on a note to lapse, refusing or causing to be held a bank draft of the smallest amount, exposes one's commercial reputation to the liability of having information concerning the same spread over a large territory.

We would caution our readers to jealously and zealously guard their interests in these respects, and a word of caution regarding personal habits might be well at the same time, as the said personal habits or such of them as show an inclination toward extravagance or dissipation are likewise duly noted, commented on, and have a tendency to lower one's commercial standing, be his reported financial standing ever so high.

KEEP TRACK OF YOUR CREDIT BUSINESS.

As lately improved the laundry ledger furnishes the most complete and simple record for laundry accounts to be obtained. It has two styles of ruling, designed respectively for regular accounts with customers and for accounts requiring the ordinary ledger form. Four hundred pages are given to the first form and one hundred to the last.

In the division of regular accounts, each customer has a space, extended across two pages, in which all entries are made. The name is written but once, and under it is room for address and special memorandum, such as date, place of collection, etc. There is separate space for the debit entry of each week, and in the adjoining column for the corresponding credit entry when payment is made. Each month occupies a division by itself, and there is space for footing and balancing the account at the end of every thirty days. The last 100 pages, ruled in the ordinary ledger form, are for such accounts as rent, labor, fuel, etc., and those from whom goods are bought.

The portion of the ledger which is devoted to customers' regular accounts is indexed through the books, and the accounts therein are arranged alphabetically. In front there is an index of the ordinary type, by the use of which the regular ledger accounts can be indexed.

Laundrymen using this ledger can easily keep the run of their credit business. It shows at a glance what each man owes; how prompt he is in paying, and whether it is desirable to retain his account. On the first of each month the ledger becomes a balance sheet showing in detail what is outstanding.

The ledger contains space for 1,000 accounts running one year and 200 regular ledger accounts. It answers for either large or small laundries, as space not used one year is available for the next. It is well made, printed on a fine quality of paper, bound with patent spring back, has full canvas sides and red leather back and corners, which makes one of the finest and most durable bindings known.

The book closed measures 15½x8¾ inches and is 1¾ inches thick; open it measures 8¾x30½ inches.

To those requiring a larger ledger we call attention to the twelve account, 500 page book, No. 26, which is made especially for large laundries. It has space for 3,000 yearly accounts.

This laundry ledger is used and recommended by so many of the laundries throughout the United States and Canada that they are carried in stock by every dealer in laundry supplies, which all must consider as pretty good evidence that it is the best system of keeping a record of your credit business to be obtained.

CASH BUSINESS.

Unless laundrymen get the cash for their work some one must suffer. It may be the help, the landlord, the machinery and supply men, or someone else who has been liberal and given the laundryman credit. By slow degrees the men in this business are beginning to realize that they can not do business at a profit and pay their bills unless they do get the cash for their work.

The small amounts generally due a laundry on weekly bills of individuals appearing so trifling to those who are continually asking credit from week to week, or by sheer carelessness permit them to go over, that it has no effect on their conscience when "dunned" for money. These people never take into consideration that there are many others who do likewise, and consequently when the laundryman needs cash to settle with his creditors, he finds that the accumulation of accounts of this kind have been run up into hundreds of hard earned dollars.

There is but one way to conduct a laundry and make it a profit, and that is to insist on the cash every time a bundle goes out, unless the patron has a monthly account which is collectable when due. The coupon system is one of the surest to get the cash always, and those who adopt it are in the end winners.

BELIEVES IN THE CASH SYSTEM.

Mr. M. Timberman, of the American steam laundry, Washington, Ind., had this to say relative to the cash system:

"I want to give my experience since I adopted the cash system.

"I am not doing a large business by any manner or means, but I get the 'chink' for what I do. I don't believe I have lost $5 a year since I adopted the cash business. Of course I have a few kickers, but that don't change my methods. I have a few customers that I let have one or two bundles and then insist on a settlement. I am no 'fighting cock,' but I will not permit any one to ride over me rough-shod. An experience of this kind was had one time. Three of the men I had confidence enough in to trust for small amounts made a great howl when my collector called in on them for money. They came into the office at different times and jumped on me. They were warm under the collar and I got a little steamed up myself, and if it had not been for a 3½ foot railing between us there might have been a scrap, but they didn't come over on my side of it, and I didn't want to intrude on theirs. We cooled down after a bit, and though that was nearly a year ago, they are my warmest friends and best patrons to this day.

"I believe it is better to do less business and get the cash, than to try and do a large business and have my books filled with accounts. By doing a cash business my wife and I had money enough to take a two months' rest and vacation this summer, and we spent one month in the west, and the other in the east, also attended the Laundrymen's Convention. On our return, my son having attended the business during our absence, I found all bills paid and a nice little sum in the bank. That is what the cash business does for me. I can now discount all my bills and I know the machinery and supply firms I have dealings with enjoy it as well as I do. We can sleep better at night and do more during the day when we know that there is a little nest egg laying in the bank to do business with."

HE PAYS IN TEN DAYS.

Happy is the merchant who carries with him the "ten-day" passport. The millionaire wholesaler from whom he buys shakes him cordially by the hand, talks politics with him, asks: "How's business in your section?" The salesman kow-tows low; the ten-day man is the chap for him. He gets the plums. If there are any bargains secreted from the general gaze he gets them. The fat of the land is his while he stays in town. He is followed and chased by a thousand-and-one salesmen, who want him to "see our line, the very finest ever shown." He buys cautiously. His patronage is valuable; he knows it. Nobody loads him up if he can help it, for doesn't he pay in ten days?

Even an occasional visit to the credit department, "just to talk over things," has no terrors for him. The rack that is always present to the ninety-day and four-month fellow is carefully hidden from sight. The credit man is most cordial, slaps Mr. Ten-days on the back, opens his choicest box of perfectos, "jollies him along" for a few minutes, and bids him "good-by and good luck." '

If this was all, being a ten-day man wouldn't amount to so much. But when Mr. Ten-days goes into a house he hasn't done business with before, and, after selecting a bill of goods, is politely asked to give a few references—"as usual, of course; undoubtedly everything is all right, but, you understand, just a matter of form"—and when the credit departments of his old houses respond, "Good for all he wants—pays in ten days"; "All bills settled in ten days"; "A-1, prompt pay"; then how that delayed shipment is hustled out and a letter written to Mr. Ten-days, "Awaiting your further commands, etc., etc."

And still there are men who settle their bills in four months who, with a little shaking up in the store, a little more care and good judgment in buying, a little more vigor in store management, and a slight increase in the advertising, might step up into the ten-day class.

Then there is the difference in discount. Does it amount to anything? Calculate and see.—Ex.

AGENTS AND EXPRESSAGE.

A TABLE SHOWING COMPARATIVE RESULTS TO AGENTS ON TWO PLANS.

Editor National Laundry Journal:

Will you, or some brother laundryman, inform us as to the customary methods of dealing with agents who send small shipments from outside towns. For instance, on a shipment of from $2 to $3 gross amount, does the laundry generally pay the expressage both ways, supposing the charges to be 30 cents each way, besides the regular commission, which in our case is 20 per cent to all our agents?

While we have several agents who send us a fairly large shipment, we have some who are unable to get together any more bundles at one time that will aggregate more than amount above stated. Yours truly,

"WEBFOOT."

* * *

There is no established rule in the above matter, but we believe that the practice of paying express charges one way, in addition to a stipulated commission, is the most common. Some pay express both ways in addition to such a commission; while a few laundrymen pay no express charges at all, but, in lieu thereof, they allow a larger commission. In some cases, where the laundryman pays express charges either one or both ways, it is stipulated that he does so only on packages the bill of which reaches a stated amount.

It is a question that has to be looked at from more sides than one. The agent is frequently interested chiefly in getting his own work done, and if he can get express paid both ways and a small commission in addition, or if he is obliged to pay express one way, and his commission will cover the same, it is all he wants, and his object is accomplished.

On the other hand if he has to pay all express charges, although he may get enough larger commission to enable him to do it, he is then in a position where it will be more of an incentive for him to hustle and further increase the amount, as his commission being at a much higher ratio, every additional dollar's worth of business will count just about so much clear profit, as the express charges will not increase with the ratio of an increase in business.

For instance, if an agent sends $3 worth of work; is getting 20 per cent commission and express paid one way; the express charges being, say 30 cents each way, he will have a commission of 60 cents out of which he will net 30 cents; when he increases the business to $4 he will net 50 cents and at $5 net 70 cents.

Figuring on a basis of a larger commission to the agent, the latter to pay all express charges, the agent would, on a $3 package at, say, 30 per cent, be allowed 90 cents out of which he must pay 60 cents express charges, leaving him a balance of 30 cents. On a $4 package he would be allowed $1.20, out of which he would have a balance of 60 cents. While on a $5 package he would be allowed $1.50 out of which he would have a balance of 90 cents.

The laundryman under the latter arrangement nets on a $3 package, less 30 per cent, the agent's commission, $2.10, the same amount as under the 20 per cent-and-express-one-way-arrangement. On a $4 package he nets $2.80 as against $2.90. On a $5 package, $3.50 as against $3.70.

At this point, however, both parties are in an advantageous position for future business. The agent gets exactly the same amount net and consequently the same per cent on a $3 package, under either arrangement; on a $4 package he gets 60 cents net as against 50; and on a $5 package he gets 90 cents net as against 70 cents; and both the amount and the per cent of his net profit will increase with his business.

While the laundryman starts out on the latter plan, with the $3 package netting him exactly the same as by the former, both in amount and in percentage, and while it remains the same, instead of being reduced slightly as the business increases, still there are ten chances to one that the business will continue to increase, and the amount of net profit will increase with it, although the percentage of expense remains stationary and the percentage of profit is reduced.

The majority of laundry packages coming in by express will run as low as $3; and unless required to reach that amount, the most of them will be less. So long as the shipper is not paying the express charges it is immaterial to him. The benefit to be had from paying larger commission and no express charges is to get your agent interested in increasing the business and we consider the plan worth trying.

THIS IS THE WAY TO TALK.

BUT NOT THE WAY TO ACT.

Editor National Laundry Journal:

With your kind permission I would like to bring before the readers of the Journal the subject of express rates.

This matter has been up before the L. N. A. and sundry associations many times, but I have failed to learn of any decision rendered in the matter.

I, like many others, claim that the express company is squeezing us too hard; and if we can pull together, it seems we might get the same rebates the department stores have.

Here are the present rates I have to pay: Forty cents to $2.00 per 100 lbs., all within a radius of 100 miles—40c rate at 5 and 10 miles distant; $2.00 for the 100 miles—each way—i. e., if I get a basket from a certain point and the charge is 40c, we have to pay the same back to that point—this includes the weight of our basket. These weights graduate. Thus—if a basket weighs 50 lbs. at the 50c rate, it is not 25c, but 45c; and if it weighs 5 lbs. more it is the same as 100 lbs. of freight, or 50c. Suppose we discuss this a little and find out the lowest rate obtainable by laundrymen. M. W. F.

The express companies, some years ago, agreed to grant to laundries the 100 lb. rate, except that a minimum is fixed, below which no parcel is taken. This is a privilege granted to fish, oysters, game and other packers, and at the time of its concession to laundrymen was considered quite a point gained by them.

The concession is universal, and laundrymen who are not getting the benefits should look the matter up.

CANADIAN EXPRESS RATES.

Editor National Laundry Journal:

In reply to communication of "M. W. F." [above] in regard to express rates, I will say that the Canadian express companies give a much better rate than that quoted. Taking for example his 50-lb. basket at the 50 cent rate, would over the Canadian express companies' route be 30 cents, and he could also send as high as 60 lbs. at the same price, as 30 cents is the minimum charge unless the parcel was 5 lbs. or under, when it would be 25 cents. For 80 lbs. a charge of 40 cents is made; 90 lbs., 45 cents.

In regards to a rate of $2 for 100 miles, this looks to me excessive, as the Canadian company will carry goods for 117 miles at the rate of 90 cents per 100 lbs., and where this company comes in competition with the Dominion Express Co. both will carry them over 400 miles at a rate less than $2.

I think "M. W. F." must be in error in regard to the charges that are made on this, or else the agent of the express company at his point is not giving him the correct rate.

I contribute this mite in hopes that it will be a benefit to "M. W. F.," and also as a recognition of the valuable information I have received from time to time.

Yours truly, DOWN EASTER.

THE EXPRESS COMPANY'S SIDE.

COST OF EXPRESS SERVICE.

The following, as some of the reasons against legislation adverse to express companies, was recently prepared by an official:

Few persons give any thought to, or have knowledge of, the cost of conducting an express business. A man pays 25 cents or 50 cents for the transportation of a package, but does not stop to consider or inquire how small a part of the sum paid is net earnings to the company. There is no successful business done at a smaller margin of profit to the individual transaction. The business is made up of an infinite number of transactions, upon each of which the charges are small, and the net earnings, considered with reference to the individual transaction, are significant. It is only by multiplying these small transactions indefinitely that companies can figure out even a reasonable interest on their investment. The territory operated by one company may be extensive, its volume of business and gross earnings large, and yet its net earnings will be small, because each transaction is done at a small margin of profit, and sometimes without any margin. Legislators introduce bills proposing to impose burdens upon these companies, amounting to two or three and sometimes even ten per cent, or even more, without concerning themselves about the relation that the sum will bear to net earnings; and recently the Nebraska State Board of Transportation was asked to reduce the rate of these companies 33 1-3 per cent, which would have wiped out their net earnings on the traffic affected more than six times over. The experience of one of these companies (and the experience of each is substantially the same) shows the following percentages of cost to gross earning:

	Per cent.
Paid to railroads	49.60
Paid to employes	33.60
Paid for office rents	2.79
Paid for losses	.46
Paid for stationery and supplies	1.59
Paid for stable expenses	3.36
Paid for taxes and other expenses	3.15
Total	94.54

That is out of every dollar earned 94.54 cents was paid out to cover these items of cost, leaving but 5.46 cents for net earnings. This enables us to ascertain the net profit on the individual transaction. If the charges paid are 40 cents (and this is average charge), take out 94.54 per cent, and the remainder, 2.18 cents, are the net earnings on the transaction.—The Express Gazette.

ADVERTISING PROBLEMS.

Advertising space in a good medium is to be compared with a store in a good locality; and poorly prepared advertising matter placed therein is similar to engaging a clerk who is without the ability or tact to sell goods; or to paying good salary and traveling expenses to a salesman on the road who is likewise lacking in qualifications.

* * * *

Some laundrymen say, "What have we to advertise? We don't get in a new stock of this thing or that every day or two and need to call attention to it; we can simply put our card in the paper, and that's all there is to it." Is that so? When you meet a new acquaintance it's very likely you would hand him your card, but can't you think of something else you would like to say? Now, supposing you would meet him repeatedly day after day, would you shove that same old card at him, show your stupidity by saying nothing, or would you try to think of something interesting, entertaining or profitable?

Put it another way. Would you employ a person to represent you to your trade and the public for the purpose of maintaining and increasing your business, who could not, or would not, say something further than that he represented the I. B. White Laundry concern? Of course you would not. Then why should you do this same thing through your advertising space? Think this over.

* * * *

You would not think of calling personally to solicit trade, and simply introducing yourself as I. B. White, proprietor of the Silver Gloss Laundry, asking for their patronage, and repeating the same thing tomorrow, the next day and thus continue without any further remark or argument, would you?

No! This is what you would do if your object in calling was to get their business and you were in earnest: You would ask them why you could not have their trade; tell them of the improvements that have recently been made for facilitating and bettering laundry work; and of such of the improved facilities that you had adopted; of the improvements that had thereby been made in your work; of the systems now in practice by you to get your work out quicker as well as better; of the new and more obliging driver that you had put on in place of the one through whose brusqueness you had lost some business; you would find no end of argument as to why you could please them as well or a little better than any one else.

Now, why don't you talk in the same manner in advertising space? Advertising is talking; that's all it is, and one should talk therein as nearly as he would in a personal interview, as the brevity necessary will permit.

* * *

Make your advertising interesting to the reader. In laundry advertising the points for appreciation on the part of your patrons are many. They may want to know why your work is so much better than it was; why the edges of the collars and cuffs are now so much smoother, the flannels softer, or your starching done so as to give a pleasing, pliable finish without the stiffness of sheet metal. How it is that you manage to have such gentlemanly, well-dressed drivers and get them around so promptly on schedule time. There are many other matters that would interest them.

You have an opportunity to show them the great saving in time made by their having their bundles ready when called for; explain why it is necessary for you to do a cash business; tell them that the reason you took off the driver whom they had come to like so much for his promptness and politeness was to advance him to a better position; mention matters of late improved machinery recently adopted to better the work; that you have been forced by growth of trade to provide larger quarters; have opened an office in their neighborhood for their convenience; in fact, you can find innumerable matters of interest to them and profit to you to bring to their attention.

In addition to the many matters in which they may be already interested in having explained, there are more that you could find advantageous to bring to their attention.

JUDICIOUS ADVERTISING.

METHODS AND MODES AS WELL AS PROPER MEDIUMS FOR THE LAUNDRY TRADE.

(Written expressly for the National Laundry Journal.)

Today the laundries of the United States are cleansing but a small per cent of the soiled linen worn.

A few years ago cereals were cut from the soil by hand sickles; today our harvest fields are reaped by horse and steam power. Wearing apparel was formerly cut and made by hand for both men and women; today it is cut and sewed by machinery operated by an electric motor; and the baker with his machinery and modern motive power is rapidly supplanting the domestic kneading trough. With such an environment, how long is the ordinary washtub, the corrugated washboard and hand wringer going to dominate the kitchen on Mondays?

Since the occupation of our laundrymen is confronted with such condition and excellent opportunities for the getting of a greatly enlarged business, why not make known to the public the splendid facilities for meeting the wants of the general public? I noticed that some of the laundrymen maintained that the business itself was of such a nature that it could not be successfully advertised, although it is conceded by the majority that advertising is a good thing in case it is done judiciously.

What is meant by judicious advertising? In the abstract what is advertising? For the lack of a better definition, I would say it is to make known who, what, where you are; and specifically and emphatically make known the special qualities of the goods you have to offer.

The first step is to attract the attention of the public. Right here is where the greatest amount of tact and ingenuity must be displayed. Unless the attention of your audience is secured, it is utterly useless to proceed further.

In order to get the attention it is essential that some unusual, novel method should be adopted; something that will arrest the attention at a glance and hold it for the consideration of the subject matter.

I would refer to an object lesson that appears upon the pages of the National Laundry Journal each issue. Upon the arrival of the paper we take it up, turning over the leaves carelessly, glancing here and there for something that is of interest, without noticing particularly the numerous "ads" until we reach THE "ad" in question. The originality of the cut and its striking characteristics gets the undivided attention of the reader. The cut discloses and illustrates every point made in the reading matter. This method may be styled a judicious plan.

The manifold mediums offered the tradesmen in setting forth the excellences of their stock of trade makes it exceedingly difficult which of the number to select. The monthly, weekly and daily papers are to the front with their superior claims. The bulletin boards, street cars, calendars, theater programmes and a thousand and one other devices are pressing their claims. Out of this multitudinous assortment of mediums, which shall be selected? The one that will best subserve the best interests of advertisers. In my judgment, newspapers, especially those that have an established reputation, are the best.

An "ad" in a paper of an established reputation carries with it the reputation of the advertisers and gives special weight with the readers. The "ad" becomes an integral part of and carries with it the force of the paper, which makes it much more effective than an "ad" on a bulletin board, which has nothing behind it excepting the boards.

MAC.

A QUESTIONABLE POLICY.

The occasional reference made in hotel advertisements regarding means of escape in case of fire and absence of certain uncleanliness in the culinary department; railroad and steamship advertisements concerning precaution taken to avoid accidents; dairy advertisements with reference to the uncleanly habits of some other dairyman; and laundry advertisements relating to the non-use of acids is, to say the least, very questionable in taste, policy and results, as a rule. It is suggestive to the reader of dangers to himself or his property, and comes with poor taste and lack of tact from an advertiser.

The fact that the Cunard line of steamers has never lost a life during their long career, and the value of the use of that fact in their advertising, is an eminent exception, but nevertheless proves, rather than disproves, the rule. Why should a transportation company suggest even a matter which might prevent a journey, or after careful investigation on the part of the reader perhaps result in the choice of some other line?

Why should a laundryman suggest a matter that might result in the conclusion, on the part of the reader, to continue in contentment, having his linen done fairly well at home, in preference to the possible dangers heretofore unthought of?

It is well enough for the laundryman to be prepared to make a showing in case the question is raised, but the raising of it by himself is similar to a thief looking for a policeman and an opportunity to prove innocence when no guilt may have been charged.

When a laundryman advertises that he uses "no acids" that will destroy the fiber of the goods laundered by him, it is very suggestive that acids are used in other laundries. It is a great injustice to the laundry trade. It is a dishonest and, we might say, disreputable way to secure trade.

If, as we said, the attention of the public is called to an alleged danger of having their linen washed at the steam laundry, it will do more harm to the whole business than the destruction of thousands of garments by the use of something unnecessary to the work by laundries who desire to save labor by the use of destructive materials in their work. Let a half dozen men tell a friend he looks sick, and no matter how well he may be, the chances are he will be convinced of the fact that he is ill and begin to treat himself with medicine.

POINTED PICKINGS FROM EXCHANGES.

A well-dressed ad is like a well-dressed man; it doesn't care who sees it.

The best reason for advertising is confidence in the efficacy of advertising. The advertiser who has his doubt about the point will seldom make a success.

That advertising pays is no longer a doubt. Just what nature of advertising pays is the question. It is being able to solve this problem in advance that denotes the clever advertising man.

The man who advertises and stops just as the results were about to come is like the boy who shakes the tree till the nuts are loose in the burr, but, unconscious of his progress, leaves before they fall. The next boy gets the nuts.—*Profitable Advertising.*

SLEEPY ADVERTISING.

"Did you ever notice," asked the life insurance man, "how careless some people are about advertising? I just picked up a copy of a trade journal of March 12; a bright, up-to-date journal, whose advertisers, as a rule, change copy with a great deal more than average frequency. One firm is evidently an exception to this rule, as I notice their advertisement still reads: 'The new pure food law which goes into effect January 1'; a little slow this for March 12. Advertising of this character is distinctly out of date, and leaves anything but an impression of enterprise on the part of the house issuing it or the mind seeing the announcement."—Sidney Arnold.

* * * *

Try to have the headlines of your ads come just as near as possible to the main subject.

Don't generalize. Don't imagine you have to disguise the business part of your advertising as if it were a bitter pill to be sugar coated. If your goods are all right people want to know about them.

It is a mistake to suppose that advertising has got to be disguised or covered up in any way. The plainer and franker and more business-like it is the better people like it.

An advertisement that beats all around the bush and talks about the weather and the little birds singing in the branches, and all that sort of rubbish, not only uses up space that has to be paid for, but obscures and handicaps the particular element of advertising that is most attractive to the people you want to reach.

The sort of people you want to attract by your advertising are people that you can probably sell goods to. You don't want to attract mere idle curiosity seekers. You don't want advertisements or headlines that will merely catch an idle fancy. That isn't business.—Wolstan Dixey in Printers' Ink.

* * * *

The newspaper advertisement has fulfilled its mission when it has brought the prospective or possible buyer into your store to inspect your goods. Whether he becomes a purchaser or not and whether you retain him as a customer must depend upon the treatment which he receives, the price and quality of your goods and the cleverness of your salesmen. Do not find fault with the advertisement that has brought the buyer to your door. It has done its entire duty. For any failure to keep him blame the goods, your employes, your methods of business or the fickleness of your visitor. The adv. finds the customer; you do the rest.—Sacramento (Cal.) Bee.

* * * *

The nearer you can come to making people see the goods you are talking about, the better advertising you are doing. It is a good deal better to offer something special—even though it isn't fully described—than to advertise in a general way. But it is much better still to make an adv. perfectly plain and distinct so that everybody may know exactly what you are talking about—and in their mind's eye almost see the article.—Chicago Apparel Gazette.

SHUTTING OFF STEAM AND STOPPING ADVERTISING.

"Shall we stop our advertising for a while now?"

This is a question that some business men are apt to ask themselves, particularly during what they regard as their "dull season.'"

Suppose your engineer asked you:

"Shall I stop putting coal on my fires, sir?"

What would you reply?

"Why, no—unless you want the engine to stop!"

The advertiser who thinks of discontinuing may argue, "We have been advertising so long and steadily that our name and specialties are well known, and we intend to advertise again when business is better in our line than it appears to be now; in the meantime our business won't stop."

No; neither will the engine stop the minute the men suspend shoveling in coal. The point is, however, that when the engine is to be started again, ten times as much will have been lost in power as has been saved in fuel or feed.

Using up reserve force never pays.

It is a loss, however it may be looked at. The buying public is prone to forget. It is, moreover, much more difficult and much more expensive to regain a lost customer than to prevent his straying away.——Money Maker Magazine, Chicago.

KEEPING IT ALIVE.

Intelligent stock raisers know that a certain amount of feed is necessary to keep an animal alive. They might feed that amount as long as it lives and it would never gain a pound. There is no profit in that kind of feeding. The kind that pays is the kind that builds flesh rapidly. If it takes twenty pounds of food each day to keep a sheep alive, twenty-five pounds a day will make it gain flesh. It's the extra five that brings the profit. It's the same way with advertising. You have to do a certain amount of advertising to make them wake up to the fact that you are in business at all. You have to pay a certain amount to keep your advertising alive. What you pay above that amount brings profit. Some advertisers fail because they do not use enough space. They use barely enough, or sometimes not quite enough to make the advertising self-sustaining. A little bit more would make it profitable. It is better to advertise a little too much than not quite enough.—Bates.

WHY HE CAME BACK.

"I thought the people didn't notice your advertisement," said the editor.

"They didn't seem to," answered the merchant, "until I took it out."—Chicago Grocer.

CONTINUOUS ADVERTISING.

The best plea for continuous advertising is contained in the December number of Chas. Austin Bates' Criticisms; the fable of the Crow and the Pitcher. The fable is as follows:

"The late Mr. Aesop, who used to write small, pertinent tracts with large, aggressive morals, for the edification alike of the ancient Greeks and the modern school boys, is responsible for this anecdote.

"A certain Crow had contracted a large, importunate thirst. As he was looking about to find some means of relieving himself of this thirst, he discovered a Pitcher which contained water. But the Pitcher was very large, and the quantity of water it contained was small, and reposed at the very bottom of the Pitcher. For anatomical reasons the Crow could not dip his bill into the water and drink from the Pitcher as it was. Nor was there any use in trying to pour out the water, for the Crow could not lift the Pitcher.

"But he was a wise Crow, and also persistent. He picked a pebble from many lying around and dropped it into the Pitcher. He kept on dropping pebble after pebble into the Pitcher until the water approached near enough to the top for him to drink, and he slaked his thirst with ease."

From this moral Mr. Bates naturally arrives at a moral, which is that continuous advertising pays. If the Crow had stopped at one insertion, merely because he could not see any results, he would be thirsty yet.

The secret of good advertising lies not in single insertions at different periods, but in the constant presentation. There is many a "thirsty" advertiser today, who, through his short-sightedness, failed to reap the benefits which lay in his power to take. To stop after one insertion is to show very little courage.—Business.

* * *

The business man who does not advertise is mighty apt to go home tired at night, but not from over-work.—Plain Talk.

* * *

If you expect to conquer in the battle of today,
You will have to blow your trumpet in a firm and steady way.
The man that owns his acres is the man that plows all day,
And the man that keeps a humming is the man that's here to stay.
But the man who advertises with spasmodic jerk,
Is the man who blames the printer because it doesn't work.
The man that gets the business uses brains and printer's ink,
Not a clatter or a sputter, but an ad that makes one think;
He plans his advertisements as he picks his well-bought stock,
And the future of his business is as solid as a rock.

—Exchange.

* * *

There are so many factors that go now to the making of an advertisement—thought, expression, display, etc.—that a novel combination need not be so very hard to obtain. Once obtained, its perpetual fashion (not its exact phrases), perpetually reiterated, becomes a power. If the reader is, by it, constantly made to hear what the firm behind it offers each day he will at last be captured by its importunity and surrender to its claims.

It is not in human nature to reject a continued persuasive appeal.—Fame.

* * *

Don't be discouraged if you don't succeed in writing advertisements that suit you the first six months; keep trying and reading the good work of others, and before you realize it you'll find actual pleasure in writing your advertisements.—Furniture Worker.

LAUNDRY ADVERTISING.

HOW TO ADVERTISE WELL.

(Written expressly for the National Laundry Journal.)

A good advertisement is supposed to tell the points of merit in a clear and concise manner of the article or business advertised, in a definite but terse way, easily and quickly read, and without the least trouble of comprehension on the part of the public readers. If there are no good points set forth, it is very much the same to the public as though nothing of the kind existed. The more perfectly this is accomplished, the greater will be the satisfaction derived from advertising.

Effective advertising is composed—first, of a carefully prepared copy, typographically well set, printed on good paper, and lastly, well placed. These are the essentials of the effective (which is necessarily profitable) advertising.

The distribution of a commonplace advertisement, catalogue, or booklet in these days of excessive competition and rivalry, is sure to result in a waste of time, money, and postage, as expected returns are not being realized, because your advertisement did not have merit enough to attract attention and arouse sufficient interest to be well read. It consequently failed in its purpose and quickly reached the waste basket.

Below will be found sample ads. as "pullers" in the laundry line, if properly placed:

We're just as Thankful

For a small package as a large one. Each will receive the same thorough and careful attention. If we get the former, it may in time grow to the latter, by the satisfaction you will derive in wearing our laundered work.

* * *

Florida Laundry,

2163 Jay Street.

'Phone 7460.

You Be the Doctor ℞

for a little while, and make a critical examination of a bundle of our laundry work, and see if you cannot conscientiously recommend the

White Laundry.

....'Phone 237.

The above, while especially designed for newspaper use, could be employed afterward in three ways, one of which would be with two more ads of same style and space, making four, and converted into a folder, printed in a bronze green ink, on bright bristol board, for counter, package or mail distribution. ADSTER.

A NOVEL ADVERTISING SCHEME.

Mr. J. H. Toussiant, proprietor of the Des Moines, Iowa, steam laundry, struck a novel advertising scheme. He had an open barouche decorated with flowers and signs, and hired a male quartet to furnish open air concerts on the principal streets of the city. They serenaded all the hotels, newspaper offices and the general public, and the large signs, "Des Moines Steam Laundry, Largest and Best," could not help but be read by every one.

CLEVER LAUNDRY ADS.

It is not often that the writer sees anything which literally swerves him from his path, but he did the other day. Any one passing cannot help noticing the poster advertising of A. W. Cumming's establishment. And if he sees it—and is interested in such things—he will read it too, and not only that, but study it, and carry the idea in some pigeon-hole of his brain for a long time. It would be impossible to convey the full force of the effect without the striking illustration which the wording explains. This illustration is a large representation of a two or three year old child, minus its clothing—and is very similar to those used in the various soap advertisements in the high class magazines. The wording, nicely set above and by the side of the cut, is as follows:

> **My Clothes**
>
> are at the
>
> **Dunkirk**
> **Steam**
> **Laundry**
>
> Where yours ought to be.
>
> A. W. CUMMINGS,
> Dunkirk, N. Y.

Now, the closer you analyze this piece of publicity the more you will be impressed with its value as a laundry advertisement. The nature and originality of the whole scheme challenges your attention, and your eye would find it in any crowd. Then you begin to think what it means—and what it intimates.

* * *

I want to show two styles of ads. I have run at different times in our daily paper, and which have certainly brought results. I don't give the name of my laundry, but use a "fic." name as it will answer all purposes.

ACCORDING TO THE RULE

there are but few

LAUNDRIES

which can

WASH WELL

but by our Modern Process

With Good Materials

every garment comes out when washed,

CLEAN, SWEET and WHOLE......

Cleanemup Steam Laundry.

We Can't Do It

for what some others do your work for

But We Can Do

better, which is more important to you, as the life of your

Shirts, Collars and Cuffs

are lengthened by our process of laundering them.

Let us try a lot for you.

Surprise Laundry Co.

Advertising pays when you can catch the eye of the public, and I believe I have done so this time.

A Subscriber.

The St. Joseph, Mo., Herald started a Cuban relief fund, and at once Ike Stone, of the Jet White Laundry, with his usual liberality, fell into line, and attached a coupon to all his lists sent out with the following:

THE ST. JOSEPH HERALD'S CUBAN
STARVATION RELIEF.

Beginning next Monday, March 21, and continuing until March 26, Five per cent. of the amount of your laundry list will be sent in your name to the above fund.

Yours,
JET WHITE LAUNDRY.

JUST RUN YOUR FINGER
OVER THE TOP EDGE OF A
STANDING
COLLAR
: : : : : : : : : WE LAUNDER.

NOTICE ITS SMOOTHNESS—

That's a moulded, beveled edge. The result of handwork—by a special operator—with a new device—our own design. Nothing like it in town. It does away with "jagged" edges. You don't like "jags" or "rags." We don't have either in stock. You want neck comfort; we can give it to you.

HURON LAUNDRY,
714 N. 6th St., Kansas City, Kas.

P. S. Is there anything more we can do for you?

This is a sample of some of the newspaper advertisements placed by a laundry in Kentucky:

Send Your Laundry

TO

Ky. Steam Laundry,

I Will Treat You

□

All the Year

O

W. N. Cropper, Prop.,
13 and 15 S. Upper St.

A LAUNDRYMAN'S ADVERTISEMENT.

It should be marked with merit.
Washed without lyes.
Colored carefully (not too blue).
Rinsed well of all superfluous matter.
Starched with argument that will stick.
Dried with humor.
Polished with wit (unmixed with irony).
Sent home in a short, well-rounded package brought

to a point, taking care that it gets to the right party and so that the point will strike.

We Must Wash . . .

We may live without poetry, music and art;
We may live without conscience, may love without heart;
We may live without lovers, live without hope;
But civilized women cannot live without soap.

❧ ❧

We may live without books, what is knowledge but sorrow;
We may live without beauty, it fades on the morrow;
We may live without law suits, indictments are quashing;
But where is the one who can live without washing.

❧ ❧

PATRONIZE

The Davis Laundry Co.

FLANNELS.

Flannels? Yes, we wash them. Brought up in a cold country, we know all about flannels. Shrink them? Yes, that's easy. Make them larger after they have been shrunk? Yes, but that's not so easy; or, better still, we return them the same size. The water we use is XXXX hydro double distilled, which, blended with the supplies which we buy expressly for woolens, and lastly, the washman (that's us), makes a combination hard to beat. Flannels? Yes, we wash them. The Model Steam Laundry.

IT IS UP TO YOU

◆

We have spared no pains or expense to equip our plant with the best and latest improved machinery; we filter all water used; buy the best materials on the market; employ none but the most competent help and can guarantee that we are fully prepared to give you the most exquisite laundry work. Will you let us have a trial order?

◆

Progressive Laundry.

A CHAPTER ON LAUNDRY ADVERTISING.

(Contributed.)

A most important step in newspaper advertising is choosing the paper, or papers to be used. Your object is to reach the largest number of people at the lowest possible cost per thousand reached. The paper with a circulation of 100,000 copies daily, selling you space at $2.80 per inch daily, is cheaper than the paper of 50,000 circulation that asks $1.70 an inch. You will reach the public at a much lower cost per thousand.

In large cities of 200,000 population or over, the rates for newspaper advertising are so high as to preclude the laundrymen from using a large space and, as a small adv. would be lost in the run of the paper, the user of a small space is wise to pay the extra rate for preferred position, as top of column, next to reading matter and followed by reading matter, or better than anything, top of column three sides next reading matter. This space in a good paper of from 50,000 circulation upwards, costs enough to take your breath away at first hearing, but two inches of that space is better than ten inches, run of paper, for advertising a laundry.

The second point to be considered is the length of the contract. There is much good money wasted by spasmodic advertising each year. Don't begin newspaper advertising unless you have nerve enough to keep it up when you feel that you are not hearing from it. Don't go in a paper for a week or two to see what will happen, for nothing will happen. The effect of advertising is only felt when you are persistent in keeping before the public. Unless you are willing to sign a contract for six months or a year don't advertise in newspapers. Having made a contract keep your space well filled, change the matter every issue, live up to what you say in your ads. and newspaper advertising will bring handsome results.

The next important question is what to say to your audience. Above all, don't try to say too much in one ad. Tell one thing at a time and tell it as forcibly as you can. Then stop. Tomorrow, make another point and so on. Make your ads. newsy, that is to say, tell the news of your laundry just as the reading columns of the paper tell the news of the community at large. Be serious. Jokes and puns have no place in advertising. Start right in with your story as:

Neck Comfort

Isn't possible when your collar has "saw teeth" edges. In our laundry every collar is ironed with a smooth, round, comfortable edge. No extra charge either. A postal brings wagon.

HILLIER & CO.

Avoid using slang phrases or words in ads. like this:
"In the neck"
"is where the chicken got the axe, but our customers are not bothered with rough edges cutting their necks," etc., etc.

The Goodhart laundry, of Chicago, shows good taste in advertising, and serves for a good example of what laundry advertising should be. The advertising done by the Yale laundry of Washington, D. C., is said to have been the means of Mr. Walker's success—advertising backed up with good work. Frazee's laundry in Washington has done some splendid advertising, using a small space daily and a larger one on Sundays. The Neptune laundry of Philadelphia, both in style and persistency shows model advertising as does the Quaker City laundry of the same city.

The writer, located in a town of 250,000 inhabitants, uses two daily and one Sunday paper. The ads. are changed every issue, the same ad. never appearing twice. The same thing may be said twice over but it is said in a different way. The space used is two inches single column, top of column, three sides next reading matter. The combined circulation of the two dailies is about 60,000 each day and the cost is nine cents per thousand of circulation or $4.50 daily.

Assuming that but one person reads each copy of the paper how can a laundryman reach a thousand people in any other way at the cost of nine cents? Below will be found specimens of what proved to be good trade bringing ads:

Wings...

The points on a collar cause you much trouble and expense because they break at the seam. If this seam was dampened before turned, cracking would be prevented. We have a girl to do this and nothing else. A small detail, but it counts.

Hillier & Co.

A New Era

in the laundry has arrived when we can guarantee not to fade colored shirts under penalty of paying for any we spoil.
Patronize laundries that don't avoid responsibility for fading colored shirts.
Wagons call.

HILLIER & CO.

LAUNDRY STORE CARDS.

By John C. Graham, in Printer's Ink.

Does your wife wring your bosom? Is it properly starched and effectively ironed, so as to give it a fine gloss? If not, bring it to us.

Clean linen should be every man's pride. That is where we encourage him. We turn out immaculate shirts, collars and cuffs.

Every article is scrupulously washed prior to any laundry work being done. Note the whiteness of all work leaving our establishment.

We take as much care of your goods as if they were our own.

Promptitude is one of our virtues. If we promise work at a certain time you will get the linen and not excuses.

Nothing is too dainty for us to handle. The costliest lace is as safe here while being cleaned as if you were superintending it yourself.

Cleanliness is next to godliness. (There should be a church next door, so as to carry out the idea thoroughly.)

We want to make our good reputation better still by giving universal satisfaction to our patrons. If dissatisfied, tell us why.

If any other laundry is doing any better work than ours, please inform us of it. We want to keep the lead we have, at all hazards.

You need not bring your work or call for it unless you like. Our wagons call for and deliver work free of charge.

Our prices are adjusted to the quality of our work. We pay good wages to good people for good work. And we have to eat something, too.

If your work is not done to your satisfaction we will do it over again without extra charge. The main thing with us is pleasing the customer.

The people we employ are all expert laundry workers, and they have the best of machinery and material at their disposal to insure the most excellent work.

We make a permanent friend of every new customer. And their praise brings many of their friends.

THE LAUNDRY FIRE PROBLEM.

THE ELEMENTS OF PROPER FIRE-PROOF CONSTRUCTION.

(Written expressly for the National Laundry Journal.)

For the reason that the question is not merely of individual risk, but of insurance rates, and consequently of the amounts of premiums to be paid year after year, if for no other, the individual laundryman owes it to himself, and to his craft, to thoroughly inform himself upon all points of fire-proof construction and inspection, extinguishment of fires, etc., not only for his own personal protection, but for the benefit, indirectly, of the widespread business in which he has a more or less important part. The lowering of insurance rates on laundry establishments throughout the country by a single point, if that one object could be accomplished by agitation and discussion, would save the laundrymen of the country, collectively, a very large sum annually.

The vast importance of this matter long ago led your correspondent into the thorough investigation and study of the fire problem as applied to American laundries of the first grade, with the idea always in view of collecting, by observation, experience and research, such information as might be of real value to the individual laundryman. The first paper naturally deals with the general facts of the fire-proof construction.

Many buildings used for laundry purposes are popularly considered fire-proof, which are rather fire traps, and much money is spent on so-called fire-proof construction. Unless fire-proof construction can be practically gained, the money spent in the attempt to obtain it is wasted, and the original hazard is not decreased.

This paper aims to present in convenient shape a brief description of the several classes of fire-proof buildings in accepted use, together with a few remarks concerning the properties and qualities of the materials employed.

It must be understood in the first place that no material used in building construction is practically fire-proof, with the exceptions of brick or burned clay, both of which have, of course, been through the fire test in the processes of making. A building constructed of incombustible materials throughout and stored with only small quantities of combustible and inflammable matter can be considered approximately fire-proof. But laundries cannot be placed in this class, and buildings used for laundrying purposes cannot, therefore, be constructed absolutely fire-proof with our present knowledge and methods. We can only adopt measures tending to prevent fires breaking out, and apply devices that diminish the danger of blazes once started, confining and localizing the conflagration.

USE OF IRON IN CONSTRUCTION.

It is sometimes asserted that iron is unsuitable for fire-proof construction, by reason of its failure to stand when exposed to a very high degree of heat. That this is so is, of course, admitted; but, nevertheless, it is the best material at our disposal suited to modern requirements for building in the larger cities; and the builder of laundry establishments will meet with more satisfactory results in devising means and methods for its protection against the destructive effects of fires than by discarding it entirely for something of still less comparative merit.

All constructive iron work in laundry buildings should be protected from the direct action of fire by some fire-proof and non-conducting coating, securely fastened to the member it is intended to protect. Columns or girders of wood so protected resist the action of fire longer than if made of iron and allowed contact with fire without protection.

THREE CLASSES OF FIRE-PROOF STRUCTURES.

Fire-proof structures may be, in a general way, divided into three classes. The first embraces those in the construction of which only non-combustible materials are used, and in which all constructive iron and woodwork is properly protected against the destructive action of fire. The second class embraces those into the construction of which non-combustible materials enter, in a large measure, but in which the iron and woodwork is not protected by fire-proof and non-conductive coatings. Structures built upon this plan will be suitable for any purpose which will not put into them so much inflammable materials as to injure or weaken the framework in case of fire. Classes one and two, just mentioned, may be described together, the principles of construction being identical in the two, class one simply carrying them somewhat further than the other. The third class comprises all buildings in the construction of which combustible materials are used, but in which all vital parts and exposed points are protected by modern and efficient fire-proofing.

In the construction of such buildings as we have indicated in what we have called the first class, all combustible materials are rigorously excluded, except for doors, windows, sashes, stair rails, floors and minor fittings. The external face of the outside wall may be either of brick, sandstone or granite. The backing should be a brick, with a hollow space about two inches wide—not less—located about one brick's length distant from the inner face of the wall. All openings in the brick wall are arched. The floors are constructed of iron beams carrying arches of brick or hollow tile, or else corrugated sheet iron. With the use of brick arches or of corrugated iron arches, the "haunches" and crown are filled in with concrete, leveled with the tops of the beams. When floor tiles are used they are bedded in about one inch of cement spread over the concrete. When the floors are of wood, strips about 2x2 inches are embedded in the concrete, and to these the floor is nailed. These strips should be from sixteen inches to two feet apart. The space between the strips should be filled with cement mixed with fragments of porous brick.

Referring now to the three plans of construction enumerated, it may be remarked that there is very little difference between the methods of constructing the iron beams, so far as strength is concerned; but there is considerable difference in the matter of their weight. The lightest construction of the three forms is represented by the hollow tile. The second in point of weight is represented by the arches of corrugated iron, while the heaviest of all is the brick arch. Where plastered ceilings are employed the plaster is applied directly to the brick arches, corrugated iron, or hollow tile, though sometimes, when corrugated iron is used, the under surface is simply painted. Where flat ceilings are required in connection with iron arches, iron laths are riveted to small angle or T-irons which run from and rest upon the bottom of the flanges of the beams. On the whole, the hollow tile construction is probably the best for flat ceilings. It is proper to remark, in passing, concerning this construction, that it is very important that the soffits of beams and lath, arching to the iron girders, receive a coat of some good and tried fire-proof and non-conducting material, not less than one inch in thickness and securely fastened on. For this purpose, a mixture of asbestos and pipe clay is very effective. The soffits of beams may also be protected by the brick skew-backs, being made in such a form as to lap the lower flanges of the beams. The lower flanges of the floor beams may be protected by means of a light iron framework, to which is applied a coat of plaster.

COLUMNS AND PARTITIONS.

The shafts of the cast-iron columns should be continuous from middle to middle of the floor thickness, enveloped with not less than one inch of fire-proof and non-conducting material, securely held to the shaft by buttons or ribs imbedded in the material. The "capital" and base should be of cast or sheet iron, fastened to lugs or bosses cast on the shells and long enough to pass through the envelope.

If light partitions are desired, i. e., such as do not start from the foundations of the building, and for which the use of brick would be impracticable on account of its weight, hollow terra cotta tile may be used. Another method, more expensive, but admitting a construction which is self-supporting, consists of light I-beams, generally four inches deep, placed vertically two feet between centers, with the ends riveted or bolted to plates or channel irons secured to the floor or to the ceiling, to which, in turn, iron lath are bolted for receiving the plaster. Partitions of this nature can readily be trussed so that they will add no weight to the floor from which they start. They are also more desirable for buildings used for laundrying purposes, as against those which are heavier or start from the foundation of the building, by reason of the practicability of changing them as called for by the exigencies of the business. The heavier, and the deeper founded a partition, the more difficult and expensive it is to make changes in its position or construction.

ROOF.

All steep parts of the slated roofs, which are the most commonly used for fire-proof buildings, should be provided with rolled iron purlins, T or I shaped, weighing about two pounds to the lineal foot, riveted to the jack-rafters or trusses. The spans of these purlins should not exceed five feet for slate, weighing about ten pounds each. The distance between centers of purlin depends upon, and is always equal to, the weathering surface of the slate, one purlin being required for each line of slate. For example, a slate 12x24 inches, showing ten inches to the weather, with four inches lap, requires the purlins to be ten inches from center to center. The slate is fastened to the purlins by fine gauge copper wire, passing through two holes in the tail of the slate, and around the purlin. Another method, more expensive, but in proportion to its greater security, consists of two 3-16 inch diameter bolts, with heads countersunk in the slate, and fastened with a nut to a hook hung to the purlins. Instead of purlins, corrugated sheet iron is sometimes used, running from rafter to rafter. To this slate is fastened by wrought-iron pins, countersunk and passing through the slate and corrugated sheets, where they are bent so as to form a hook or clinch. The slate may also be imbedded in a layer of cement applied to the corrugated iron.

The flat and gently sloping parts of the roof are covered with either cement, copper, lead, zinc, tin or galvanized sheet iron. Either one of these metal coverings is fastened to a layer of cement, about one inch thick, overlying the concrete, supported by corrugated sheet-iron arches, by the tags imbedded therein. The supporting material may also consist of burned clay tile, resting on T-irons. Another very good method consists of metal boxes of slight depth, filled with some kind of good fire-proof material. These boxes are about two feet wide, from two to three inches deep, and of lengths up to the eight feet spans. Their bottoms, sides and ends are formed of galvanized sheet iron, and the tops of copper, or galvanized sheet iron; the boxes are placed alongside each other and fastened to the beams of the roof. This method possesses a distinct advantage in that it is light, strong, overcomes the difficulties presented by expansion and contraction, and forms a smooth ceiling underneath.

DOORS AND SHUTTERS.

Fire-proof doors and shutters are indispensable to a fire-proof structure of any description. They may consist of either layers of corrugated sheet iron, riveted together, or of a sheet iron plate surrounded by an iron frame, forming an opening, into which a fire-proof material is filled and secured by lath of a suitable construction. This makes an effective shutter or door, in that the fire-proof material is directly exposed to an encroaching fire, and no part of the metallic construction is in danger of warping and permitting the material falling out. It is essential, however, to insure a proper working condition of shutters in laundries, to so construct each shutter that it can be attached to the glazed sash, and that both will slide on the same bar or track, so that the sash cannot be opened without also moving the shutter. In buildings where sub-dividing walls are made use of, it is well so to arrange the shutters that they can be operated from an adjoining room or compartment, by means of rods, endless chains, or some other device.

In the third class, as above enumerated, i. e., those constructed in part of combustible materials, protected, all joists, struts and roof timbers are to be of wood, and if possible of large scantling. All floors are to be counter-ceiled, so that not less than two inches of non-conducting material will be between the floor and counter ceiling. The spaces between the scantlings in the partitions are to be filled with mortar, or with a mixture of clay and cut straw, not less than one foot above the floor level. The roof construction may be of wood. For the slated parts strips of wood 2x2 inches are nailed horizontally to the sheathing boards, the spaces between strips being filled, level with their tops, by a mixture of clay and cut straw, or any other fire-proof non-conducting material. The same method is also used for the flat parts of the roofs, the metal tags for holding the roof coverings being nailed to wood strips.

It would not be strange if the average laundryman reading this paper should be inclined to fear that the application of these principles of fire-proof construction in practice would make a laundry so equipped and constructed a dark, dismal and unsightly place. But such is not the case. In the first place, these methods of building will not be unduly apparent from the street and office, the outside appearance being rather that of bold solidity. From the rear fire-proof construction would necessarily show itself more, but this is immaterial.

Attractiveness is not incompatible with the adoption of any or all of the suggestions which have been made. An appearance of bare ruggedness, something like the appearance of the engine rooms of an electric light or power plant, undoubtedly results, but nothing is lost thereby, and a clear light falling upon the place, makes it look anything but dismal and melancholy. Moreover, a fire-proof building is more apt to be healthful to work in, and more agreeable from a sanitary point of view. Added to these advantages the fact that the factor of safety is immeasurably increased, and the adoption of fire-proof principles, when one is building a laundry for himself from the ground up, becomes doubly desirable and sensible, both from a theoretical and practical point of view. And more, a knowledge of these matters, general and practicable, not necessarily scientific and profound, will enable the laundryman who, by preference or necessity, rents his premises, to select his building with a better regard for protection from fire than he otherwise could.

SECONDARY ASPECTS OF FIRE-PROOF CONSTRUCTION.

The most difficult task throughout the whole study of this all-important subject, has been to select from the great mass of facts and testimonies on these points, only such suggestions and recommendations as might prove of practical value to the laundryman anticipating building a new structure for himself; and also, to guide in a measure, others in the selection of rented buildings, best adapted for the various uses required of them, from the fire-proof standpoint.

There are three main factors of safety, which should be understood and sought after by the owner and manager of every laundry establishment, namely: (1) good construction; (2) adequate apparatus, both for work and for fire-fighting, and (3) discipline among employes.

The absence of any one of these factors often entails heavy losses, as shown by the tabulated reports of all the insurance companies.

Distrust of concealed spaces behind woodwork, in which fire can spread while out of reach of water, has been forced upon many laundrymen at a high cost, a number of fires having become unmanageable from this cause alone. Such a method of construction is the very art of inviting fire, and yet is often adopted by owners and builders. It is really an inside timber building attached by combustible braces, or furring, to an outside frame of stone, brick or iron. Usually buildings containing these defects are described as constructed of the latter materials, and as such, are popularly supposed to be fire-proof.

The one-story construction is recommended as most economical, when sufficient ground is available, both in respect to the time needed for erecting, and the ease with which it can be heated and lighted. But in most instances, the one-story structure is impracticable—always in large cities—on account of the high valuation of the land.

DANGEROUS ERRORS TO BE AVOIDED OR CORRECTED.

Architects are almost precluded by selfish owners of property from even suggesting better and higher priced construction, and the noble art of building well, is, in some respects becoming a lost art.

Owners of property adopt unsafe methods of building, without much consideration, because they are undoubtedly, the cheapest in the beginning, and rely upon policies of insurance. The stability of the insurance companies depends wholly upon the state of their insured property, and, as the great Chicago fire forced nearly all of those in existence at that time into bankruptcy, so would another such calamity do with those of today.

Before coming down to rules, we may be better understood if we give a statement of common methods of construction which should be advised against, and yet which require little alteration or expensive methods of protection, if adopted before the plans are acted upon.

The customary method, where fire-proof construction is but blindly aimed at, appears to be to erect a very combustible timber building inside of an incombustible shell. This timber structure is usually attached to the supporting walls by wooden braces; it is often composed of thin material, with the greatest number of corners, and, having the largest possible area of sawed surfaces, most readily to be ignited, the various divisions of the space between the inside timber structure and the outer walls and partitions are usually connected by open ways, or flues of wood, in which the fire can circulate freely, and at the same time is out of reach of water. To make the destruction more certain and complete, in case fire should be aroused in any part of the building, the shavings and other rubbish which accumulate during construction are in a large degree deposited in these flues, and between the floors and ceilings.

These points in construction are to be specifically avoided:

1. Roofs of any shape constructed of common plank rafters, covered with 1-inch boards, iron or any other material, and sheathed and plastered upon the under side of the rafters.
2. "Boxed" cornices of every kind.
3. Floor frames of plank set edgewise in the usual way. (Such floors are undesirable even if not sheathed or plastered on the under side. If sheathing or plastering is especially desired, either process should be put only on wire.)
4. Furrings on side walls on which either sheathing or plastering is placed.
5. Wooden dadoes furred off. (That is, avoid any concealed space behind woodwork; in fact avoid open space anywhere.)

In general, the motive is to avoid the common constructions now prevailing in out-of-date types of stone and iron buildings, and public structures generally.

SAFE METHODS TO BE ADOPTED.

Upon considering these forms of construction so strongly condemned, it would at first appear almost impossible to put up any building which should avoid all these faults. The proper forms, however, are not so difficult as might be supposed; and we may now state the methods advised in order that a building shall be safely constructed, and on the whole be not much more expensive than if built in the ordinary bad method. The main points to be kept in view are few, and simple:

1. That the timbers of the frame of all floors and the roof shall be made in such solid manner as to burn slowly if attacked by fire; that such timbers shall be smooth, and that the corners shall be chamfered off.

2. That the floors and the roof shall be of thick plank, with mortar or sheathing felt between the planks and the boards of the floors.

3. That there shall be no concealed space in the building under a floor, behind a furring or in a partition where fire can lurk, out of reach of water; or where a rat or a mouse can build a nest of any material; not a few fires being caused by these mischievous animals building nests of oily rags and other substances liable to spontaneous combustion.

4. That all elevators, stairways, or other openings from floor to floor shall be adequately cut off by properly constructed hatches, doors and other appliances, mostly automatic in their operation.

5. That openings in walls, exposed windows, etc., shall be protected by adequate wooden doors or shutters covered with tin, automatic appliances preferred.

6. That all rooms in which special dangers exist shall be plastered on wire lathing, close to the surface of the ceiling, and following the line of the timbers; and that all iron, steel or stone posts on which the safety of any building greatly depends shall be carefully protected from fire, either with wood or metal overlaid with wire lath and plastering.

FIRE-PROOF DOORS—INTERIOR.

The matter of doors is of the utmost importance, as in the case of fire in one part of the establishment, a good wall and door may keep the flames back and under control until the proper help arrives. Especially important is it that when these apartments are adjacent, the door between the engine room and the laundry proper shall be thick and strong.

Doors consisting of wood covered with tin plate or sheet iron are excellent from a fire-proof standpoint. These are far more serviceable in resisting the progress of a fire than an ordinary whole plate-iron door. A door of this kind may be made of two thicknesses of tongued and grooved boards, crossing each other diagonally, and thoroughly nailed together. The sheets of tin are bent over at the edges, forming locked joints, as in the case of a tinned roof. In this case it is important that the edges, as well as the sides of the door be covered, as its resistance to heat lies in the fact that the fire cannot burn the wood thus protected against exposure to the air, nor can it be warped, as in case of the whole iron door subjected to more than slight heat.

If a fire-proof door is hung on hinges, especial care must be taken to insure its security by fastening these hinges to the door by means of bolts, rather than by screws, and connecting them to the wall in an equally secure manner. The latches should be selected with a view to durability, as such a heavy door as this construction necessarily requires is apt to be destructive to weak latches when attacked by fire.

Where the position of the doorway permits of sliding doors, it is preferable to have them on tracks, care being taken that cleats be placed on the floor on each side of the doorway, so as to rigidly secure the door at its lower edge when shut. In several large storehouses, where fire-proof construction finds its highest scientific illustration, there are a number of such doors in the firewalls, arranged to close an electric circuit when they are all shut, and this fact is recorded on the proper dial of the watchman's clock at certain regular intervals.

Fire-proof doors are frequently made so as to close automatically in advance of a fire by means of the giving away of a metal alloy fusible at from 140 to 170 deg. F. The track upon which such a door is hung inclines about one foot in eight, and the door is kept from closing by its own weight by means of a round stick about one inch in diameter, which reaches from one edge of the door to the opposite side of the door frame. At the middle, this stick is cut in two diagonally, and a ferrule made of two pieces of thin copper soldered together longitudinally with the fusible alloy covers at the artificial joint in the stick. When this ferrule is exposed to a temperature from 140 to 170 deg. F., its yielding causes the ferrule to split open, and the stick separates into two pieces and allows the door to shut automatically. In order that this stick shall not fall in the way of the door and thus prevent it from shutting tightly, the stick is connected to the top of the door frame by small chains attached to each end. Another excellent method of utilizing this fusible alloy to close fireproof doors and shutters is by means of a wire extending around the room, and containing in various places links made of two pieces of brass soldered together.

These are but a few of the very many mechanical devices in common use in different buildings at the present time. A serious study of them will prove of great value to every laundry proprietor or manager, as anything that will tend toward lowering the fire hazard is valuable in a laundry. American laundrymen will serve their own best interests by planning, when building or remodeling, for the incorporation of enough of these inventions to insure the best possible protection for their plants.

TO RENDER COTTON AND LINEN UNINFLAMMABLE.

Professor Doremus, in his laboratory in the college of New York, is authority for the statement that all inflammable material, whether it is lace curtains, table linen, woodwork or cotton dresses, can be rendered uninflammable by the process which he discovered many years ago, says the Upholsterer. It is not patented or secret, but is open to any one's use, and there is nothing injurious in its composition.

Professor Doremus first called the attention of the public to the preparation he had discovered as long ago as

1873. Professor Doremus lost a child by fire many years ago, and at once began to study to discover something which would make the clothing worn by children fire-proof. He finally learned that by washing the fabric in a solution of phosphate of ammonia it became impervious to the greatest heat and the strongest flame, and since that time the phosphate of ammonia bath for linen, tablecovers, napkins and all articles of clothing has been as regularly used in the professor's household as has been the starch or blue bath. Said the Professor: "The same preparation can be used on the woodwork about the windows and doors, and even the wainscoting in rooms can be washed with the solution and made practically fire-proof."

"The preparation of the formula is very simple. Purchase at any drug store a pound of phosphate of ammonia. Dissolve it in water, make a strong solution, and then keep it in the laundry for constant use. Let the laundress, when she is preparing to starch the clothes, pour a little of the solution in the bowl holding the starch, and the linen will come out of the wash fire-proof. I earnestly recommend the use of this formula by families when it can be prepared so cheaply and applied so easily."

EXTINGUISHING FIRES.

One of the best agents for extinguishing fires, according to the National Druggist, is aqua ammonia, without any addition whatever. In one instance, where fire had originated probably from spontaneous combustion in a pile containing several tons of cotton seed, and the interior of which was almost a solid body of live coal, a half-gallon of ammonia completely smothered the fire. In another, which occurred at Savenay, France, the vapors of a tank containing fifty gallons of gasoline caught fire in the linen room of a laundry. The room was instantly a mass of living flames, but a gallon and a half of ammonia water thrown into it completely and almost immediately extinguished the fire. The ammonia was in a glass demijohn in an apothecary's shop next door to the laundry, and was thrown into the room by the druggist as an experiment. To use his own words in reporting the circumstance—in the Union Pharmaceutique—M. Janneau, the pharmacist, says: "The effect was instantaneous—torrents of black smoke rolled upward in place of flames, and in a moment every trace of fire was gone. So completely was the fire extinguished that workmen were enabled to enter the room almost immediately, where they found the iron tank of gasoline intact."

FIRE INSURANCE.

BETTER CLASSIFICATION OF LAUNDRY RISKS AND CONSEQUENT LOWER RATES.

Reduction in the cost of a commodity results as a rule from the action or demand of the buyer.

Insurance premiums are rated by the amount of risk assumed by the insurer, or company insuring. Laundries are classed as hazardous, if not extra hazardous risks, and in some cases the classification is right, but the modern laundry, as a rule, is as far from extra hazardous, as care can reasonably make it, and it is time that the facts be brought before the "powers that be," and a proper recognition and rating be had.

Insurance people seem to "have eyes that see not, and ears that hear not," when a matter of reduction in rates are concerned, and consideration can best be expected by a concerted and general action of the insured in bringing and keeping the question and facts concerning it, prominently, and actively, before all insurance men, and companies with whom they deal.

The dry-room has been the source of danger in laundry risks as recognized by insurance people, and is generally the first objective point of the inspector when examining a laundry; but improvement in the industry has not only abolished the old red hot iron-heating stove from the dry-room and laundry, but it has by the advancement in machinery for extracting the water from goods, and for ironing the same without being otherwise dried, almost entirely done away with the dry-room itself, so far as the flat goods which need no starching are concerned, and these goods comprise the largest part of the business in some laundries. The diminished necessity for the dry-room materially reduces the demand for steam, which is leading to the introduction of gas engines and electricity as motive power, these being much more convenient, cleanly, and in many cases more economical. The laundry risk is further improved where the modern metal dry-room is used. In which there is nothing which will burn except the goods that may be placed there to dry.

With the necessity for the dry-room reduced to a minimum, and that cared for in the metallic room, and the irons and ironing machinery heated by gas, the demands for steam, and consequently fire, are reduced to a minimum that surely should receive recognition. Whether such recognition is had or not rests first with the laundrymen. If they take the matter up and push it there is no reason why they should not meet with success. It is not necessary to act as associations at first, but each one interested should embrace every opportunity to hammer these facts into insurance representatives until they receive recognition. It may be slow progress in getting through the local agent, inspector and general agent to the insurance union, but keep everlastingly at it and it will "get there."

If sufficient interest is shown, the collection of statistics from laundrymen throughout the country showing the amount of insurance carried, premium paid, and losses made in the past, could be had, and the same would be a valuable aid in securing proper recognition and reduction, or a valuable guide and leader to mutual self-protection.

LIKES THE INSURANCE SCHEME.

Editor National Laundry Journal:

When I started the Danville plant I had to pay 2½ per cent insurance premium. On my Carbondale plant I have to pay 3 per cent. Greater risks are taken every day by standard companies for less money, and the only way we can get it reduced will be to have it fought by all as a body. If that does not have the desired effect, join together and form a company of our own on the assessment plan. Yours truly, D. H. BURT.

INSURANCE RATES TOO HIGH.

Editor National Laundry Journal:

You have touched a keynote in your article in regard to laundry insurance, and laundrymen throughout the country must arouse to the necessity of a forward movement to correct the existing exorbitant rates.

We are here compelled to pay $42.50 per thousand on our plant, while within a block is a printing office upon which the rates are but $13.50 per thousand, each having the same power—steam boiler and engine—but theirs having open blast furnaces for stereotyping, and with four large presses running constantly and much combustible matter throughout the plant, and practically no water supply for fire purposes. Ours has dry-rooms and ironing machines all carefully protected, and with unlimited water supply in constant use, both in pipe and reservoir. What is the justice in fixing our rates more than three times theirs?

We are anxious that this matter should receive prompt and energetic agitation at the hands of our fraternity, and hold ourselves subject to a draft at your hands for any assistance in our power. The Journal is a powerful medium, and with a united force of laundrymen the rates must take a tumble. Yours for self-protection,

QUEEN CITY LAUNDRY COMPANY,
Sioux Falls, S. D. Per A. M. Avery.

AN INSURANCE PLAN.

Editor National Laundry Journal:

Regarding fire insurance rates being too high, I know of several laundrymen who have been kept from taking out policies on this account. I have a suggestion to make. It is to organize a co-operative fire insurance company composed of laundry proprietors throughout the country, and when enough has been subscribed have the company incorporated in some state. Laundry owners could get their insurance for about one-half what they are paying out in premiums now. Respectfully

Detroit, Mich. C. O. EVERTS.

WELL PROTECTED AGAINST FIRE.

BUT INSURANCE RATES ARE EXTREMELY EXCESSIVE.

Editor National Laundry Journal:

As insurance is an important factor with us, I take the liberty of telling of our situation in regard to that subject.

Our building is 40x70 feet and two stories high. The boiler is at one end of the building, and upon the bank of a stream. It is well set in brick, and the top and dome of the boiler has a four-inch covering of asbestos, with a cement floor in front of furnace doors. The ashes are drawn on the cement floors and thoroughly dampened; they are then thrown over a ten-foot embankment of stone, into the creek.

We have no engine, as all of our machines are driven by water motor, each machine having its own motor.

The dry-room is of brick on three sides, covered on the outside by the frame building.

In our ironing room we use gas for the shirt machines and body ironers, generated from gasoline, the generator being twenty feet from the building, and encased in brick. The nearest buildings to the laundry are thirty-two feet. The next nearest building is seventy feet. The creek, which is 100 feet wide, separates us from the town proper.

The above are the only fire risks, unless we should be the victim of an incendiary.

Our fire protection is first-class. We are situated directly on the two main water-power pipe lines. One is eleven inches in diameter, having a fall of 536 feet in a mile distance, developing at the laundry 246 pounds pressure; the other pipe line is nine inches in diameter, and has a fall of 190 feet, developing 90 pounds pressure. It takes the combined efforts of two men to hold the hose of an inch and a half fire plug, off the high pressure.

We have nine fire plugs, each one and a half inches, with hose attached. They are distributed as follows: One in the boiler room, one in the wash room, one in the ironing room, also five on the different corners of the building, and there is one two-inch stand pipe which can be played on any part of the laundry. With such power and protection it would seem almost impossible to burn down the laundry. We also have two trusted employes, who sleep in the building, and all employes are cautioned against fire. We insured last year for $4,000 at 3 per cent, and when the policy expired we were asked the excessive rate of 5.65 per cent. This rate we could not pay, so we now carry our own insurance; though we, like all fair-minded people, would rather carry insurance and be safe to a certain extent. The insurance companies insure dwellings, barns, etc., here for 1½ to 2 per cent which have no fire protection but our town hose carts. Does this seem just? We say, No. Respectfully,

Amador County Steam Laundry.

Sutter Creek, Cal.

* * * *

Editor National Laundry Journal:

The insurance question was brought up some time ago. What! oh, what! has become of that?

There is certainly something wrong with the laundry fraternity, for every time a serious problem or interesting subject has been brought up, it has never been pushed to a satisfactory or beneficial conclusion. Why is this? Why cannot we, as business men, achieve something beneficial to our business interests, the same as any other branch of industry? Is it because we are too selfish, or don't know how?

Now, please don't all speak at once, but let somebody say something on the subject. Sincerely yours,

M. W. F.

Mr. F. Says "What! Oh, what! has become of the insurance question?

Now we would like to modestly ask Mr. F. what he has done about it; or, to be a little more modest, what has he helped to do about it?

There certainly is "something wrong with the laundry fraternity," as Mr. F. says, but did it ever occur to him what it was that is wrong? Did it ever occur to him that he owes the fraternity anything? Did it ever occur to him that he has never paid the debt? Did it ever occur to him that if every laundryman acted as he has, that there would be no Laundrymen's National Association for him to kick about?

Speaking seriously on the insurance question, we will have something to say on that subject, and will, when ready, say it very emphatically, but the laundrymen appearing to be so little interested in the matter, has prevented us from taking the matter up as we hoped to long ago. We tried to get several of the craft who have made "stabs" at the question, come out boldly and say what they know or think, but for some reason we have so far been unable to convince them that they would be promoters of a great deal of good by contributing something on the subject to our readers.

THE INSURANCE PROBLEM.

Editor National Laundry Journal:

Having been employed by a fire insurance company since I left school some thirteen years ago, I several times, when the insurance question was being agitated, felt tempted to reply.

M. W. F. seems to be sincere in the starting of an insurance company "for laundrymen only." I shall be pleased to give him some insight to the simple "formula" to follow in starting, and wish him every success. It is like many a washing formula, "good to try and then—"

After selecting the state under which he will incorporate the "Laundrymen's Insurance Company," the incorporation papers costing, say $200, some papers being renewable yearly, he deposits $200,000 in one state and smaller deposits in four others, aggregating say $42,500, for good faith to do insurance business in the United States.

I will not say anything about the various and often adverse laws of the different states, relating to and regulating insurance, but he will bear in mind that in many states policies can only be written by agents, who reside in said state, who must each be licensed, the cost varying in the different states from $2 to $5, and when one has some three or four hundred agents it counts. Then allow the agent his commission, and when premium is received, he is required to set aside as a "re-insurance reserve," i. e., in case the company should not be able to carry out its contracts, it has a "reserve" fund to pay another company for re-insuring, or taking over its business. This amounts to, on a 5-year policy, first year, reserve 90 per cent down to a 1-year policy, reserve 50 per cent.

Then he runs up against his taxes. State, from 1-5 of 1 per cent to 3 per cent; then county tax, city tax, and often fire department tax, and when one bears in mind that in some cases companies are not allowed to deduct returned premiums, i. e., in case a policy is canceled, or reduced, the premium returned to assured cannot be deducted, it brings some state taxes to, say, 5 or 6 per cent.

He appoints several men, thoroughly familiar with fire hazard and human nature (and the cheaper the men, the more expensive the experiment) to inspect the property and in his case to name rates. Think of it! Several men to inspect and re-inspect, and rate all laundries in the United States! I guess their expense account to premium income would easily equal 100 per cent alone and surely no rate could be made on a laundry without inspection.

If each company was to employ men enough to rate each building on its merits, what would the cost of insurance be?—prohibitory. In some places they appoint a board to act for all, i. e., see that the standard is properly and justly applied to the various classes—to rate them; all these companies supporting the same board—it reduces the expenses materially in that locality.

I have not said anything as yet about "losses," and if

"M. W. F." starts in he will find they'll start right in with him, all kinds, grades and conditions, from the total loss to the man who's napkin fell on the stove, claims $22 as the loss of that napkin, as it spoils a set of half a dozen pieces he had (for which you will likely find, later on, he paid about $2.50.)

A laundryman asks in the last number if 1 per cent is too high. He occupies a large frame building, has "boiler and engine inside, old-fashioned dry room, gasoline stove and three tanks." I wonder if he would like to bet $1,000 against $10 (and then pay out say 40 per cent in running on that), that he won't burn out in the next 365 days? One per cent is decidedly low.

Getting down to figures we find, taking an average for the past eighteen years in the United States for all companies: "Losses to premiums" to be 55 per cent (individual company's losses amounting in some cases for one year 135 per cent), and then the expense ratio—"expenses to premiums" average about 35 per cent more (individual company's amounting in some cases for one year to 65 per cent.)

Now, it's a bad habit to pick any one else up on a point and not offer some solution of the problem. My advice is: Construct your buildings on the lines laid down in "The laundry fire problem" (see page 328), or improve your present location, so as to prevent fires as much as possible, for it should be remembered that the various classes of hazards are divided by the different companies.

Dwellings,	brick,	city,	1 year,	$ 1
"	"	country,	1 "	1
"	frame,	city,	3 "	8
"	"	country,	5 "	16
Laundries,	"	hand,		200
"	brick,	steam,		205 etc., etc.

At any time they can tell by comparing premium income with losses, under their respective numbers, what hazards are profitable and which are not. Reduce the losses on laundries, make them profitable, and the companies will be hungry for the business; which means lower rates. It is the same as in the laundry business, at standard prices, collars and cuffs all are glad to get, but when it comes to doing fancy dresses, at one-half the actual cost of doing up same, you willingly let your competitor get them all. Insurance business ditto.

INSURANCE—DAY.
LAUNDRY—EVENING.

A SENSIBLE LETTER ON INSURANCE.

Editor National Laundry Journal:

Your correspondent, with the enigmatical signature, "Insurance Day—Laundry Evening," consumed considerable space, apparently for the sole purpose of discouraging all effort on the part of laundrymen to resist the aggressions of the fire insurance trust or combine.

In his special plea for the insurance trust companies your correspondent seems to overlook the fact that the most successful insurance associations in the world are mutual companies, hence essentially and absolutely non-trust companies, and it is also true that they are the oldest, hence would seem entitled to some consideration.

It would consume too much of your valuable space to dissect your correspondent's statements entire, but the following cannot be allowed to pass unnoticed. He says: "Getting down to figures, we find, taking the average for the past 18 years in the United States for all companies losses to premiums, to be 55 per cent." Well, what of it, and what bearing has it on the question of laundry insurance? There is nothing in such a statement to show that the companies have not made an average profit of say 55 per cent on steam laundries, and it is entirely probable that your correspondent knows nothing to the contrary.

Your correspondent assumes that nothing else or other than an insurance trust or combine is competent to give a proper rate on any risk, or to conduct the fire insurance business. Therefore, since he is their special advocate, and presumes to understand how such things are done, I would be glad to have him explain how they establish a basis rate of $3.25 for frame laundries in Georgia and, according to a suggestion in his own communication, charge only about a 75-cent basis in some other section.

I know, of course, that rates are presumed to be based on premium receipts and losses, but I also know that it is not either or fairly applied in different localities, and defy any one to show a sufficient reason for a $3.25 on steam laundries in Georgia.

Eliminating the boiler what is the hazard of a steam laundry? When the rolls are heated by gas, and no gasoline allowed on the premises, it is necessarily and absolutely restricted to the dry room. Now, presuming the steam pipes to rest on metal supports, this hazard is reduced to a minimum so very minute that there is apparently no hazard at all. Now then, where does the $3.25 basis rate come from? Is it not purely arbitrary, and equally unjust and oppressive?

Your correspondent suggests that it is only the careless and incompetent who decry the insurance trust, but as my plant was purchased for spot cash, is doing a profitable business, and does not owe a dollar in the world, this wild statement of your correspondent does not apply, but the $3.25 basis rate as established by the trust companies does.

I am distinctly in favor of a laundrymen's insurance association, and considering the number of steam laundries now in operation and the rapid increase of steam laundries, I see no reason why such an association should not be a success if planned and operated on a business basis.

Very respectfully,

COLUMBUS.

SATISFIED WITH HIS ROAST.

Editor National Laundry Journal:

That roast you gave me a short time ago on the insurance question was all right. I can stand it, for it not only hits me but a whole lot of other fellows, and that is certainly worth the scorching I got.

Now, what have I done about it? Absolutely nothing! I admit that, for what can I do when all the insurance companies are arranged against us? They have a schedule of rates and it is take them or nothing.

What have I helped to do? Every chance I got I argued with the local agents, and when the adjusters came to town I got them down to my plant and showed them that 2½ per cent was too much on my risk. I finally got a rate of 1½ per cent.

Perhaps if the whole army of legitimate laundrymen in the United States will get together and push this thing in each state as I have done, something may be gained; but I am doubtful if they can get anything lower than 1½ per cent off a company that pays their losses.

Yours truly, M. W. F.

A FEW INSURANCE STATISTICS FROM LAUNDRIES IN RESPONSE TO OUR CARD.—A WAY TO SOLVE THE PROBLEM.

For over two years the National Laundry Journal has been publishing various articles and suggestions on fire insurance for laundries. In a recent issue we published a card and requested laundrymen to fill out the same and send to us so that we could use them as a basis of something more tangible.

This month we received a letter from Mr. B. H. Onken, of the Model Laundry, Peoria, Ill., and we herewith give a few extracts from same:

"I have been trying to get a lower rate of insurance for the past three years, and am glad to say that I have been granted a reduction of 30 cents through the effort. The agent who makes the rates in this district is very firm in regard to rates, as he is controlled by the different districts which send representatives yearly to a meeting, when they adjust and fix all rates. My building is 35x140 feet, two stories and basement, all brick, and brick floor in basement. My washroom floor is 65 feet long and has a cement floor. I consider my building a very good risk and think $1.25 per hundred would be a fair one. My rate now is $1.60, but has always been $1.90. My building and machinery is valued at $20,000, and I carry on the building $3,500 and on machinery $4,500. I insure with ten companies."

The Inter-state Steam Laundry, Grafton, W. Va., is valued at $6,500. It is in a frame building and is insured for $3,000 at the rate of 2 per cent. The Troy Steam Laundry, New Haven, Conn., is valued at $4,000 to $5,000 and pays 2½ per cent on $3,200. The building is of brick. Now **here** are two cases, one in a frame building paying but 2 per cent, and another in a brick paying 2½ per cent. The locations of these risks are about equal as regards to fire chances.

* * * *

The St. Peter, Minn., Steam Laundry do not give the value of the plant, but state the building is frame, and they say they pay at the rate of 3¼ per cent on $500. The American Monarch Laundry, New York City, value their plant at $2,000; frame building, and they pay 90 cents per $1,000, and are insured for $1,500. The American Steam Laundry at Waynesburg, Pa., refuses to pay the rate asked, 3½ per cent, and consequently are not insured. They would be willing to carry $2,000 at a rate of 2 per cent. They state that there have been but three fires in the town in a year, and the facilities for combating one are the very best.

* * * *

J. S. McMath, National Laundry, Temple, Tex., values his plant at $1,800; brick building. Insurance $1,500; rate 3¼ per cent. He also has to pay $3.75 on each policy for keeping a two-gallon can of gasoline on the premises, making his insurance cost him $35.50. His policies allow him only three-quarters of the amount insured for in case of total destruction of plant, or $1,125 on a $1,500 policy!

* * * *

Dr. W. L. Woodruff, of Mobile, Ala., writes as follows:

Editor National Laundry Journal:

"I enclose you blank filled for insurance of Southern Laundry, Nashville, Tenn., and the Peerless Laundry and Dye Works, Mobile, Ala.

"I hope efforts to establish a Laundrymen's Mutual Insurance Company will be successful. Rely upon me for very hearty support and co-operation."

Dr. Woodruff reports no insurance on either plant, both of which are valued at $10,000 each, and are in brick buildings. In Mobile the rate is 2 per cent and in Nashville 3¼ per cent. Both plants are carefully protected against fire and are considered good risks.

* * * *

The Columbus, Ga., Steam Laundry is valued at $3,000, occupies a one-story frame building, pays $3.75 on a policy for $2,000 in the Continental of New York. The water supply is excellent in the town, and the fire department is located in same block with laundry. No gasoline is permitted on the premises and all steam pipes are fully six inches from woodwork.

* * * *

A. B. C. Steam Laundry, La Grange, Oregon, valuation $3,000 total. Building frame, $1,000. $600 insurance in Imperial of London, rate $3.80. Since policy was issued rate has been raised about $1.50 more than policy was issued at.

Two policies of $500 each in Aachen & Munich of Aix la Chapelle, Germany, at $5.25 per $100 on laundry machinery and $100 on boiler and engine in Phoenix Assurance Company of London at $5.50 per $100.

Total insurance $1,700.

A. B. C. Steam Laundry,
By C. S. Dunn.

* * * *

The Excelsior Steam Laundry, Raleigh, N. C., is valued at $3,000, and occupies a brick store under the opera house. They pay a rate of 3 4-5 per cent on $2,000 in the Southern of New Orleans, and Virginia State of Richmond.

The owner, Mr. Sours, writes: "I have been reading with much interest the various articles on fire insurance and note the unanimous complaint at the high rates charged, but I have not heard of any brother laundryman paying as high a rate as I do. I have more than once made an appeal to the local agents for a reduced rate, but without success. Was told by one agent that my rate was due to my laundry being in the same building where there was an auditorium and stage, but as I am three store rooms removed from the stage and separated by 18-inch brick walls I cannot see why that should affect my risk, and certainly not so materially. I trust that there will be such cooperation, diligence, and perseverance among the craft that it will eventually be the means of securing a lower rate."

* * * *

Lind's laundry, Tuscaloosa, Ala., is valued at $2,500. Building frame, iron covered. Insured for $1,000. Rate charged 4 per cent. Company, Imperial, London. There are two water plugs within 300 feet of the plant. This is excessive.

* * * *

Editor National Laundry Journal:

I beg to say I have read with much interest late articles in the Journal on the subject of steam laundry fire insurance. Everything shows that there is no regularity whatever in the rates charged for insurance on steam laundries of apparently the same class. Hamburg-Bremen Insurance Company charging only 90c per $100 in New York, and Hanover Insurance Company charging $3.25 per $100 on practically the same hazard in St. Peter, Minn., while the Continental Insurance Company charges me $3.75 per $100 for apparently the same class of risk. The same risk is written in Grafton, W. Va., at 2 per cent and the price in Waynesburg, Pa., is 3½ per cent. In other words the rate charged by the insurance companies for practically the same hazard, ranges from 90 cents per $100 to $3.75 per $100.

These corporations have no respect or consideration for the individual laundryman, or his reasonable demands, and without organization it is useless for us to hope for any redress of our grievances, but just as soon as we give evidence of our ability to take care of ourselves, they will all be not only willing but anxious to take care of us and to give due consideration to any reasonable demands. It is beyond question that there are enough steam laundries in the United States to insure each other with safety to all concerned, at very much lower rates than nearly all of us are now paying, and all that is necessary to accomplish this is concerted action. Surely there is enough business ability represented in the steam laundry interest in the United States to formulate a practical plan for self-protection from fire. I trust that you will constantly continue to agitate the subject until it is an accomplished fact.

COLUMBUS.

* * * *

LA GRANDE, ORE., August 30.

Editor National Laundry Journal:

I add hereto statements of policies held by us on our plant. A glance will show we are one of the sufferers.

We have just moved into new quarters. While in our old building we were within about forty feet of a Standard Oil warehouse and our rate adjuster taxed us 75 cents per $100 on account of this exposure. Now, in our new building, we have no exposure in same block or within 100 feet. Now, did they knock off the 75 cents exposure? Not much, although they did have a liberal turn and reduced our rate 25 cents per $100 after we had moved from an exposure which they openly said was costing us 75 cents per $100 as stated above.

While I am not as well posted on fire insurance laws and customs as some of your contributors who are opposing a Laundrymen's Mutual Fire Insurance, yet it seems to me that it can be accomplished and would be if our local and national associations would devote a little more of their time to promoting the scheme and not quite so much time deciding where they are to hold their next picnic. Yours truly,

CHARLES S. DUNN.

* * * *

Letters and statements regarding the insurance problem are constantly furnished, but they are not in such large quantities to assure us that the question to which has been given so much time and space has interested very many of those engaged in the business. It is certain that if some concerted action was taken, particularly at the conventions of the L. N. A., light could be thrown on the injustice practiced by insurance companies in their rates for insuring laundries.

From what we learn through the few we have heard from we are of the opinion that excessive rates are demanded on many risks. Location and protection against fire cuts no figure it seems with some companies. If it is a laundry that wants to take out a policy the companies seem to take every advantage of them and make it compulsory that they pay the highest rate of premium asked on any kind of a risk.

There was a time perhaps when the risks could be considered greater, but that time has passed, and the modern steam laundry of today is as carefully guarded against fire as possible. Owners of plants are more careful and the help are cautioned against carelessness in handling anything that would be liable to produce a fire. Engineers particularly look after their department with a view to guard against any danger, either by fire or explosion of boilers, so it would seem that the risks are better than ever before.

LAUNDRY FIRE INSURANCE.

SKETCH OF THE DEVELOPMENT OF THE IDEA—PRESENT AND PAST SYSTEMS INADEQUATE AND UNSATISFACTORY, POINTING TO ULTIMATE GOVERNMENT INSURANCE.

This first paper is mainly introductory to the subject, while the following papers are essentially practical, dealing with, respectively, the mutual system, the relations between insurers and insured, and the miscellany of the topic.

As the author of the papers on "The Laundry Fire Problem" I have been very much gratified to notice that the different correspondents who have contributed to this impromptu symposium have kept well in mind the cardinal principle that good construction and careful oversight of the whole establishment is a matter of prime importance both to insurers and insured. This situation places the whole subject on an excellent plane of understanding and appreciation of the fact that mutuality of interests is essential to the greatest lasting good.

Taking up now the matter of fire insurance, as between a large and widespread body of intelligent business men seeking either betterment or release—preferably the latter—from conditions long since grown extremely onerous, I believe it is for the best, before proceeding deeply into the discussion of the problem of mutual insurance for laundrymen, to examine briefly into the principles underlying modern fire insurance.

Such reference must necessarily partake in a more or less degree of a historical bird's-eye view of the subject. And by way of apology for any point where due attention does not seem to be given, the writer will simply say that the task comes to him at a most inopportune time, when the laundry rush is greater than at any other time in the whole year.

ORIGIN OF INSURANCE.

The first application of the principle of insurance was to marine risks; and this, as is easily seen, was very natural. The risk of a ship was more unusual than that of a building on the land; the owners of such property were fewer; and the risks of loss being so much greater, comparatively speaking, it was perfectly natural that those interested should first combine for the purpose of protecting each others' hazards.

At first the assumption of marine risks were taken by private persons, and from this practice the name "underwriter," applied to marine insurance, came into vogue, until now it is used to apply to almost all forms of insurance. From this primitive arrangement the joint stock company engaged in insurance, gradually arose, and the extension of the same principle soon included fire insurance.

In the United States the early attention paid by the colonists to shipbuilding and commerce caused the practice of underwriting for marine risks to be inaugurated very early in our national history, and attention to fire insurance was not long deferred. The precise date when the first company for transacting a fire insurance business was formed does not appear, but the business was well established before the revolution.

Fire insurance differs from life insurance in that it is more entirely founded upon chance. It is certain that every one of us must ultimately die, but it is by no means sure that every house or place of business will be burned down. With the exercise of a proper business caution the operations of life insurance can be made almost as certain as a problem in mathematics; but even the most cautious foresight and care cannot give this definite certainty to the operations of fire insurance. In consequence, therefore, there is always an element of speculation in such transactions, and for this reason the business can never be made to pay, and be stable, in the hands of small companies, for these have not enough range of good risks to cover the loss of any unfortunate one.

With the vast increase in the industrial activity of this country during the nineteenth century the business of fire insurance has kept pace, and the capital now invested in companies doing an exclusive business is many hundreds of millions of dollars. So clearly has the principle that large companies, doing a wide and extended business, are the safest, been seen by the public that, throughout the most recently settled portions of the country there has been but little opportunity offered for the establishment of local companies.

INSURANCE ABUSES, AND LEGISLATIVE CORRECTIONS.

The growth of this business of fire insurance brought with it at first several abuses, such as a greater extension of the business than was safe, and also opened a field for the exploitation of speculative companies, which were not based on sound financial principles, but hoped by success to make money for their stockholders. Should such institutions do a large enough business and collect sufficient premiums without meeting any extensive losses it was evident that the business was worth trying; but if they should be unlucky enough to meet with misfortunes, the result was only their failure, and the loss came upon the insured, since the actual capital contributed to the company was very little, only enough, in some cases, to pay for trying the experiment.

So numerous were the instances of these insurance speculations, and so disastrous were they to the public, that public attention was roused and measures were proposed for legislative action, by which the governments of the several leading states in which insurance agencies were established should have nominal control over them, and in the interests of the public prevent such companies as were unworthy of confidence from seeking to gain it.

Today such companies as are allowed to do business in the leading states are as sound as any semi-public institution underwriting hazards can be. Now the difficulty seems to be to obtain equitable rates from the best companies, for there is a trust among insurance companies, as among every other class of financiers, and nothing stands in the way of certain forms of industry, like laundering, being classed much more hazardous than they practically are, and being forced to pay outrageous premiums or go uninsured.

To perform for the public the same office with regard to its insurance policies that it does with respect to its bank notes—that is, to provide that the public shall not be liable to be cheated in them—is one of the legitimate functions of the government. By the intervention of state supervision the danger of speculative fire insurance companies has been as nearly done away with as is possible with a system of insurance based upon individual companies competing for the business.

That absolute security is not, however, gained by such a system, even with state supervision, is seen by a close analysis of the results of the Chicago fire. While this has been the greatest calamity by fire of modern times it is not too much to say that it is entirely possible that such another calamity will happen. Until that time comes, then, the experience of Chicago must remain the best means of reference. Suppose you owned a laundry in Chicago in the early part of the 70's, and suppose further that it went up in the flames. Let us see, then, what you would have been likely to realize upon your policies.

From the report of the State Superintendent of the Insurance Department, made on the 11th of November, 1871, and based upon statements returned from the companies in answer to a circular calling for them, it appears that twenty companies, organized under the laws of the State of New York, had ceased to do business and gone into liquidation. The loss by this single conflagration, supposing that the entire assets of the New York companies, which ceased business in consequence, were absorbed to meet the loss, and adding that incurred and paid by other companies which still continued solvent, was in the State of New York alone $20,724,457. The aggregate loss of all the insurance companies doing business in this country, including six foreign companies, was $88,634,122, which was divided in all among 341 companies, having as their total assets $145,879,521, which shows that by this single catastrophe they lost one-half of their total assets. On an average of the whole thing, therefore, your insurance policies would have been worth about half their face value, and if held by some of the weaker companies, worthless.

NATIONAL GOVERNMENT INSURANCE.

Such conditions as these call renewed attention to the proposition made some years ago in the British Parliament by Sir Robert Lowe, that the government should assume the business of a general insurer for that country. At the time the suggestion was made it excited but little comment, being passed over either as unwise or immature; but the light of the Chicago fire made it plain that it requires the collective wealth of a nation, centered in its strongest financial method, to meet the strain of a great calamity like this has been and others may be. Besides, too, the economy introduced into the administration of the business, if the nation's insurance were conducted by one bureau, instead of by hundreds of different companies, each with its numerous officers to support, would in fifty years—and such an occurrence would probably not happen oftener—prove sufficient to make up even such a gigantic loss. At the same time also, if insurance was made, in the hands of the government, universal, the rates charged would not need to be anything near as high as they are at the present time, and unjust discrimination would cease. In such case also the assets would belong to the people, the insured, instead of to private promoters, while in the dissolution of a private company the insured obtain nothing but worthless policies, for which they may have paid perhaps their full face value during a long period of years.

THE MUTUAL INSURANCE SYSTEM.

SUCCESSFUL OPERATION AMONG OTHER HAZARDOUS INDUSTRIES SHOWS IT WORTHY OF A FAIR TRIAL BY LAUNDRYMEN.

The business men who are to-day most in favor of mutual insurance for their protection against fire are believers also in the conclusion obtained with the preceding paper, namely, that the most scientific insurance is that which governments ought to offer to their people. But they know that such a condition of affairs is yet a long way off, and in the meantime they consider the mutual system better, cheaper and safer than that offered by the "old line" companies.

Many people are prejudiced against mutual insurance as such, and lose sight of the very evident fact that if you are insured at all it must be, finally, mutual. Whether you believe it or not, such is the fact. The money paid into any company, whether mutual or stock company, is the only fund against which you can draw for indemnity in case of fire and loss. If you draw upon the capital of a stock company, its solvency is impaired to just that extent, and if not made up it will not be well for it to continue in the field.

The capital of a stock company is a sort of guarantee that its policies will be paid in case of loss—so long as the capital remains—but this of course costs the insured for its keeping, for the reason that no financial institution would voluntarily put away fifty or one hundred millions of dollars without receiving some return upon it.

In Massachusetts a statute governs the case and makes each mutual policy liable to assessment equal to five times the premiums paid by the insured. In most of the States, however, such is not the case and the requirement is met by incorporating the same conditions in the charter and by-laws of the company incorporated. A mutual insurance company, incorporated in Pennsylvania, make all their contracts of insurance in their own offices in Philadelphia. Therefore, although they do business in nearly all of the states, they have incorporated existence only in one. They have no agents, and are required to make deposits only in Pennsylvania, where alone, also, they pay taxes. This provision fully answers the objection of a late correspondent to mutual companies, to the effect that a number of large deposits would be required in case a laundrymen's mutual association were to be organized.

The system of mutual insurance was first established in England, and by it the merchants and manufacturers each subscribed a certain sum in the shape of a contribution in case of loss to any of the members of the combination, out of which grew stock company insurance for profit to those furnishing the capital, and also the present system of the Lloyds, whereby a number of citizens combined, and, for a given premium, agreed to indemnify the insured in the amounts set opposite their names in event of loss.

The factory mutual system, which would be the most natural pattern for a laundrymen's mutual association, if formed, was started by Zachariah Allen of Providence, R. I., about sixty years ago. After having equipped his cotton mill with the best known apparatus for the prevention and extinguishment of fires, he required of the stock companies a corresponding reduction from the arbitrary rates demanded by them. Then, as now, he was answered, "A cotton mill is a cotton mill; and the rate is 2½ per cent." "Then," replied Mr. Allen, "the cotton mills will insure themselves;" and the result was the organization of the Manufacturers' Mutual Fire Insurance Company of Providence, R. I., and after this first successful effort, other mutuals patterned after it, with "inspection, prevention, protection and positive indemnity" as the motto.

As a member of such a combination the assured commits himself to no pitfalls or sharp practices, but is insured in blanket form up, say, 90 per cent of the value of the plant, sometimes even to 100 per cent, the value being placed upon the property by the insured, though of course altered or passed by a committee; and when loss occurs he is assisted in making up rightful estimates of his loss, and is paid in full indemnity. Should any sharp practice on the part of the member insured be displayed, however, his policy can never be renewed. The true object of a mutual company is to pay justly, not to avoid payments. The utmost confidence of all concerned is absolutely necessary to the successful conduct of the business, for the whole system depends upon mutual good faith and confidence in each other. The integrity of each member is as essential an element as the quality of the risk; in fact the moral hazard takes preference.

Statistics show that about sixty per cent of the insurable interests of the United States is covered by the mutual system in factory mutuals, Lloyds, farmers' mutuals and mutuals who confine themselves to city dwelling risks, leaving about forty per cent to stock companies. A certain percentage of each fail of success. The fact is, every branch of industry must serve an apprenticeship to this subject and follow proven lines, or else pay good money in bad debts, bad structure and in time end in failure.

Laundry insurance is a business that must be conducted on a business principle just the same as any other line of commerce, and each industry should stand on its own platform and be conducted by intelligent men familiar with each and every detail of the business they wish to control. By such combination, then, according as each business protects itself in a mutual way by betterments, the rate would decline.

Even if all business establishments were covered by mutuals, there would yet be an abundance of opportunities for the stock companies. Both systems seem essential. As stock companies, or fixed rate companies enter into the argument, they demand more or less attention, as by their combination upon tariff rates, fixed arbitrarily without regard to the moral hazard of the insured, or the general order and conditions of the property, a certain tariff is maintained in certain localities under heavy penalties for violations by brokers or agents. They succeeded in obtaining legislation against all manner of mutual assurance, and often make indiscriminating and losing rates in the hope of driving out all competitors.

Observe the cry against trusts of every kind, and on every hand. And yet few laundrymen stop to think as they support the old line companies they are maintaining one of the most powerful monopolies extant, and fostering a system against the purchaser of insurance that has for its ultimate end the most money it can make the insured parties pay, and the least money it can be made to pay when losses come to their patrons. The delays incident to many such instances are proverbial, and need no long-drawn out consideration at this point.

Legislators and patrons alike take little or no time, and give little or no thought to the tariff associations of the old line companies in every state, city and town in the Union, by means of which each company signs an iron-clad agreement to maintain arbitrary ratings, fixed by committees of those represented. Heavy fines are imposed upon agents for deviating from rates thus established, and these same committees also fix the rates of compensation to brokers and agents, not permitting any rebate of any portion of said rate to the insured by way of securing business by underbidding competition. In fact, competition, which is the "life of trade" elsewhere, seems to be in little favor among insurance financiers. They also make rates on certain buildings at the highest at one-third to one-half less than the worth of the establishment, and use every effort to keep owners from giving any of their patronage to the mutual companies, which are in the last analysis the natural safeguard against still more arbitrary rulings by these exclusive companies after they have driven all others from the field by favored legislation, and endless close combination.

The writer dare say that one-half or more of the laundrymen reading this paper have passed through the experience of having the representative of a high-and-mighty company offer him a policy of insurance at a figure less than has been put into machinery and work-room outfit alone, to say nothing of building and other equipments, stocks on hand, etc. In such case, the agent is usually powerless and does the best he can within unmovable limitations. There is no appeal in such instances; and if the laundryman happens to pull through all right, happy let him consider himself, for if he burns out, especially if there are any claims outstanding against him, the portion of his loss meagrely allowed him by way of insurance goes to pay these obligations; and he has nothing whatever—save perhaps his record—left to show for the patient labor of years, and the patronage that has been slowly but steadily building up is snatched away in an instant, and no means are available any longer to take care of it.

Rates differ, as we all know more or less perfectly, with the insurance companies' power of controlling affairs in certain territories. For instance, in some cities where their grip is especially tight and hardly disputed, the rate on laundry buildings and others of similar classification is as high as three per cent, while in others, where the combine is less effective, and the independence of insurers greater, the rate is from one-third to one-half that. A laundry is as safe in Omaha as in Cleveland, in Albany as in Indianapolis, and, naturally, rates should be equitable; but as a matter of fact they are not. In a majority of cases, all representatives of old line companies are liable to heavy fines, or even to dismissal from the service from any questionings of arbitrary rates, and they are simply human machines of their masters.

Large sums of money are annually expended by the combination in securing favorable legislation, and in the prevention of competition in their business. Bills have been placed by them before many state legislatures making it difficult for a business man to obtain proper indemnity at reasonable cost, and with an ulterior aim to discourage or kill mutual insurance. The business men of Brooklyn, N. Y., when such a measure was before the legislature of the state of New York, once assembled in mass meeting and protested against such monopoly-guided measures.

In a well ordered mutual company each member is required to put into the indemnity fund his part of a sum sufficient to assure anyone associated with him, or perchance himself, full indemnity in case of loss, as upon that feature depends its stability and its success. Ordinarily you nowadays put up your money on a game as to whether a risk will burn or not, and you look upon insurance as a necessary evil, and try to obtain it as cheaply as you can. But you should at the same time endeavor to prevent loss by fire in a combination for your own protection. No one else can protect you, and you have the choice of two alternatives: (1) You can continue to dissipate your insurance money as you do now, and have done ever since you started in business; or (2) you may spend your money judiciously and protect yourself.

In other words, you can combine your premiums in stock companies and take your chances on poor construction, bad protection and careless ownership, or combine your premiums, use the proceeds with strict relation to the condition of the industry, and, through your interest in a mutual company, put your property in first-class shape, and keep the chances of fire down to a minimum. After this has been accomplished, out of the sums you would otherwise pay to old line companies, you can, in a term of years, not exceeding twenty, under good calculation and management, have as surplus a capital the interest of which will insure your property in perpetuity.

FINANCIERING OF A MUTUAL COMPANY OUTLINED.

PLAIN FACTS REGARDING THE POSSIBILITIES OF MUTUAL INSURANCE SUPPORTED BY INCONTESTIBLE FIGURES.

The beauty of the mutual system of fire insurance is that the insured and their associates have it in their own power to govern the conditions and terms of their policies, and the fixing of their own rates is also a matter of their own concern. Enemies of such systems attempt to pick a flaw at this point, claiming that in such event individual selfishness would lead to the incorporation of weakness in the insurance plans, the tendency of which would be to undermine security and stability, the very points where strength is most needed. This plea is, however, not well founded, for the reason that experience shows that when the question of profit or loss is made a vital one to a body of clear-headed business men, they may be implicitly relied upon to take all precautions necessary to assure the permanent welfare of themselves or each other.

As an individual, the writer would much prefer to have the circumstances of his insurance fixed by a picked body of American laundrymen than entrust the same wholly to the financiers of the old line companies; and it is doubtful if any practical realization of a laundrymen's mutual insurance company would have, after once in good condition, any considerable opposition from within the body of the craft. From outside, pressure would continually be brought to bear, of course; but once protected in a mutual way, this external pressure might well be counted as nothing—except, perhaps, a natural and necessary let-off of exhaust steam.

Coming down to the main item of cost, it is in the power of those mutually insured to make the cost of the service small or large. This depends somewhat upon the extent and number of losses, and upon the amount of surplus funds carried; but useless waste can be entirely avoided.

The Boston Manufacturers' Mutual Fire Insurance Company, of Boston, Mass., is the largest and strongest incorporation of its kind in the United States, if not in the world, and it furnishes the highest standard of excellence, and covers risks of over $100,000,000, at a cost to patrons of less than one-quarter of one per cent per annum, writing risks to full values in blanket form. This success is the result of a broad-gauge policy, extending over a period of more than sixty years, and with the assistance of a liberal and broadminded and trusting constituency its record is superb, with no single instance of failure having happened from the beginning to this day and date. The same results are within the easy reach of an association of similar nature among laundrymen; and the wonder is that at this late time it has not been tried.

The limited space allowed for the treatment of such a comprehensive subject prevents the writer from going into the details of individual risks, and the percentages of loss to the value of laundry plants has been exploited time and time again, and needs no reviewing here.

Assume, then, that you have put your laundry property into proper condition for mutual insurance by eliminating from it so far as you are able the sources of danger, of which you know best. This is the first requisite, and no well-founded organization would accept your plant, as a member of a mutual combination, no matter how modern or how well equipped, unless you displayed an intelligent conception of the duties accompanying such a situation. You would be obliged to protect yourself at all points where carelessness causes fires in laundries, for you will remember that an overwhelming majority of fires are due to preventable causes. Not until these conditions are secured are you ready for a mutual organization of rational scope and sure foundation.

Applying the laws of chances which govern factory mutuals to mutual laundry insurance, you will find that the approximate average chance of damage by fire to each risk, calculating again the average loss to be about 25 per cent of the total values endangered, to be about one in 100 or one in 125; that is, about one in 100 or one in 125 laundries may reasonably be expected each year to be damaged to the extent of one-quarter of its total value. Therefore, the chance of total loss is about one in 400 or one in 500 per annum; that is, of course, approximately. Hence we come to the conclusion that when a sufficient number of good risks are combined to make the sum of the premiums for one year equal to the one maximum risk taken, it begins to be a safe business, and provision has only to be made for misfortunes and losses outside of the laws of averages and chances as established. Under such a system it is possible, of course, to have two maximum losses, or several partial losses, in one year, but they seldom occur in that manner, and to take care of such emergencies is the special province of the surplus funds. And then, too, the average of loss may not have been reached, and a proportion of the premium money saved.

Here, also, the system depends entirely upon mutual good faith and confidence in one's self and his associates. The integrity of the individual member is as essential an element as the quality of the risk, and you need not be alarmed if a member having a plant worth $25,000 or $50,000 calls for insurance to cover the same fully in case of loss proving total. Remember, to be safe and sufficient an insurance policy should be enough to cover the real value of the property insured; and, generally speaking, only the want of confidence between insurers and insured in the old line companies prevents this being the rule instead of the exception. Grasping at as large premiums as they dare take, they push insured values down to such a notch that in case of fire a loss of some kind is sure to remain with the holder of the policy, and this loss often marks the difference between solvency and bankruptcy with a business man after a scorch of fire.

Again, it is just as safe to write a policy for $25,000 as ten for $2,500, where the property is known not to be exceeded, and there is but one-tenth the work, one collection instead of ten, one annual premium to look after instead of ten, and office and miscellaneous expenses reduced by the same ratio. Should you have as many as 100 policies of only $1,000 each, in as many different companies, you must pay your proportion of the expenses in each office, whether through a broker who handles all of them or in case you insure direct. To be safe insurance should be participated in by large numbers, but it is not obligatory that the policies should be for like amounts, or all at the same rates. In mutual companies, as in others, extra hazardous risks would have to carry corresponding rates; extra good risks perhaps not more than a third thereof.

The rules governing the issuance of mutual insurance may be set down thus: Obtain the title to a certain number of risks, say for convenience, 100; and then find out what their experience has been in the past in respect to fire for the longest period. We will assume that they lose one-half per cent annually on the value of their property. They then combine and agree to pay into the common fund a premium of three times that rate of loss—namely, 1½ per cent. You say that is too high, uselessly high. Nay; that makes provision for double security, and for a surplus, and while making provision for all this you are still not paying as high as the average of premiums to the old line companies. In fact, you may be making a good proportion of saving. Always bear in mind that the rates charged should be high enough to give the utmost stability to the cash fund. It is the dividend, or unconsumed premiums, which is a matter of the most importance. Rates should therefore be adjusted on a high and equitable plane.

Let us then suppose, for instance, that 100 laundrymen each desire to insure in the average of $5,000 each. The sum of the premiums at 1½ per cent would be $7,500 per annum, and the average chance of loss according to the previous record would be $2,500. Such risks would be perfectly safe, as far as the calculations of hazards can be made. They would be perfectly safe in case each policy holder held twice his amount of insurance, for the proportions would be the same. But the facts are, as laundry plants vary in values, some would want $1,000 and others $25,000 or $50,000. To meet this circumstance you must increase the number of your members to such an extent that the aggregate of your annual premiums shall be equal to one and one-half times the maximum risk that you take on any single property. If this rule can be established, you may make your maximum risks whatever best suits the values of the insured laundries. Say you established the following basis for a small mutual company:

Establishments.	Sums in which insured.	Totals of Each Class.	Total 1½ per cent Premiums.
20 laundries (at)	$ 1,000	$ 20,000	$ 300
20 laundries,	3,000	60,000	900
30 laundries,	6,000	180,000	2,700
20 laundries,	8,000	160,000	2,400
10 laundries,	10,000	100,000	1,500
100		$520,000	$7,800

Here you have 100 chances to lose $7,800, but your actual calculated loss ratio is only $2,600, leaving a balance of $5,200 for dividends and betterments, less expenses and taxes, which would not be large, which betterments it might safely be assumed might bring the actual loss down even below one-half of 1 per cent used as the basis of these calculations. Now suppose your mutual company outgrew original plans and waxed strong in numbers. For convenience of comparison let us suppose that it increased tenfold within a stated number of years. Then the tables, based upon the same general principles as before used, would be as follows:

Establishments.		Sums in which insured.	Totals of Each Class.	Total Premiums.
200 laundries	(at)	$ 1,000	$ 200,000	$ 3,000
200 laundries,		3,000	600,000	9,000
300 laundries,		6,000	1,800,000	27,000
200 laundries,		8,000	1,600,000	24,000
100 laundries,		10,000	1,000,000	15,000
1,000			$5,200,000	$78,000

In these last tables the numbers of laundry establishments calculated are made exactly tenfold, the rates the same and the results correspondingly ten times as great. The security of the organization is, however, greater for the reason that it embraces a larger circle of the craft, and as such would be sure of more widespread and more certain attention and support. Another bit of explanation of the tables: The final line across the column dealing with the 100 laundries rated at $10,000 each, is meant to cover the class of establishments for which higher ratings than $8,000 would be made, and it does not necessarily imply that nothing over that figure would be allowed, but rather that the setting apart of 100 establishments at this figure would be very liable to cover the contingency. From the showings of the last table, wherein appears a premium total of $78,000, with a calculated loss of $26,000 and net profit (less taxes and expenses) of $52,000, it would appear reasonable to suppose that the surplus, after a certain number of years well invested, would maintain the insurance of old members without further payments; and this result would be achieved at a cost not exceeding, if equaling, what is now being paid to old line companies.

New members coming in would, of course, be subject to premiums sufficient to bring them on a level with the condition of the older ones at the start of the association, and thus the financial status of the same would be permanently assured.

THE RELATIONS OF INSURERS AND INSURED.

INTRICATE LAWS DEMAND CAUTION AT ALL TIMES—STRAIGHTFORWARD DEALINGS ON BOTH SIDES THE TRUE REMEDY.

The occasional litigations between insurance companies and policy holders are calculated to do great injury to both. That company which soonest and in the most unostentatious manner adjusts its affairs with the holder of a policy after his loss is always the most popular. But long drawn out litigation before a judge and jury, or even a suit before an impartial referee, does more damage to the insurers than can be offset by their success in any particular case; and, moreover, it injures the cause of insurance generally.

Insurance is governed by certain laws which cannot be violated with impunity—either by the insurer or the insured. The premiums paid must be equal to cover in their aggregate the average risk, and exceed it by a sufficient margin to cover the necessary expenses of conducting the business, or else bankruptcy is inevitable. It is folly to consider the interests of insurers and insured as distinct; and madness to regard those interests as inimical.

Good insurance is the friend of industry and thrift everywhere; bad insurance the opposite. Despite the crudities of the present system of classifying hazards, that classification has been established as the result of long experience and careful observation—supplemented, it is true, by the knowledge that "might makes right." Eliminate the latter factor, and remove the favoritism of one class over another, where no reason for the preference exists, and we will be satisfied with insurance conditions.

The practical question in the case before us is, therefore, If the present rates on laundries are prohibitive or unreasonable to the laundryman, and yet the best the companies will do, what is the remedy? The co-operation of both in the search for some sufficient safeguard, some measure of protection, which shall reduce the hazard and so reduce the rate; or else secession of the craft into mutual associations of their own? In the former search, could it be brought about, they would each have an equal interest. The premium rate, consistent with safety, is the result which the underwriters should seek; and at the same time it is better that the laundryman should do all in his power to diminish the hazard. Signs are not wanting that if the insurance people were more liberal with this vast branch of their business, they would find the co-operation of the insured, for the lessening of the risks, much more evident and beneficial to them than it is today or can be under the present unfair circumstances.

It would almost seem as though the insurance laws of the several states were designed to protect the companies rather than their clients; and surely our policies contain enough special clauses and prohibitions to cut out many an honest claim on some technicality, whenever the companies elect to contest a claim.

THE "ALIENATION CLAUSE."

The provision now contained in nearly all fire insurance policies, known as the clause against alienation, is framed in such a manner as to vitally affect the value of the policy and the rights of the owner of the property insured. The numerous and complicated questions and suits which have arisen under this clause have excited much interest and discussion.

The more important of these questions have been frequently before the courts within the past few years, and having in some instances been passed upon by the court of last resort, the law governing the construction of the "alienation clause" may be regarded as in the main determined. Yet it is doubtful whether the results worked out by the courts, and the construction finally reached, are clearly and properly understood and applied, except perhaps by those whose attention has been especially called to the subject. Investigation of this particular matter lay in the plan of a full and comprehensive presentation of the subject to the readers of the NATIONAL LAUNDRY JOURNAL, and the results of such investigation are herewith briefly recorded.

There is some variation in the phraseology of the clause in question, but its most common form is as follows: "If any change takes place in the title, interest, location or possession of the property (except in case of succession by reason of the death of the insured) whether by sale, transfer or conveyance in whole or in part, or by legal process or judicial decree, or if this policy be assigned or transferred before a loss, the contract shall be void." In simple everyday language this means that, if a person who insures his property sells it and the property is destroyed, no insurance money can be obtained from the company either by himself or by the person who has purchased it.

There never was any considerable doubt, even at common law, and without any such provision in the policy, that an absolute sale of the insured property made the policy void, but the doubtful questions arise when part of the insured property and part interest in same is transferred, as in case of a mortgage. A mortgage is certainly one form of a sale—a sale on condition. Does this make the policy void? Generally speaking it does not. The premises may be mortgaged, and the policy is yet binding on the company. But something depends upon the language of the policy.

In one case in a Massachusetts company, this bothersome clause reads: "All alienations and alterations in the ownership, situation or state of the property in any material particular shall make void this policy." If, under this clause, it should be decided that a mortgage was a material alteration in the ownership—which it would probably be—no insurance could be forcibly recovered. But when equally stringent clauses are not made a part of the contract between insurers and insured, and the case is decided upon its merits before the law, it has been settled that, even after a suit has been instituted for foreclosure of the mortgage, the policy is valid and continues in force until the property is sold under the decree, when it becomes of no further effect.

An interesting question arises where the premises are sold and the seller who holds the policy takes a mortgage from his purchaser for the consideration money in whole or in part. It is clear that the insurer still retains in such case an insurable interest, and generally he will be allowed to recover from the company the amount of his mortgage. But if the terms of the policy issued to him absolutely forbid any "change of title," he is unprotected, and can recover nothing. Such a clause has changed the legal aspect of the whole matter in this instance, for the transaction has slightly altered the ownership or title to the property. In a case against a certain insurance company not long ago, where it was stated in the policy that any change in title or possession, or voluntary transfer or conveyance without the written consent of the company, would make the policy void, it was held that a sale with mortgage back to the seller had such an effect. In view of these possible complications, therefore, it is the part of wisdom to obtain the written consent of the company to any change in the title, however slight, where a mortgage is placed upon the property.

In quite a number of recent cases the question has been raised, and it is a very important and practical one, as to what effect a sale by one partner to another of the former's interest in the business would have on a policy of insurance previously taken out on the firm property by all the partners. It is probable that under any circumstances the remaining partners could never recover their interest in case of loss, but was the sale by the other partner to his copartner an alienation or sale within the meaning of the clause of the policy forbidding any transfer without consent? Of course the outgoing partner can obtain nothing anyway, for he has parted with all his interest therein. The point arises in regard to partners who have bought him out. In New York state the question has been at times decided both ways, governed always by the terms of the policy. These terms, are, of course, the basis of a private contract between parties, and in such the law has no province to step in, and the common sense and caution of the insured are his best reliance against being caught in a legal trap. It is very generally acknowledged that the remaining partners in such instance may recover the entire amount of loss under the policy. In some states, however, the exact opposite prevails, and any change, however immaterial or slight, makes the whole instrument void.

The relation of insurance to bankruptcy and assignment is also an important one. In some of the states the appointment of an assignee in bankruptcy is constructed as a temporary change of ownership, and as such is regarded as having voided the policy, because the title to the insured property passes from the debtor to the assignee. It is not precisely a sale, but it may be counted an alienation within the meaning of the policy. Where a general assignment for the benefit of creditors is made by a debtor holding a policy, there is considerable difference in the laws of the several states; and it behooves a laundryman in such predicament to consult competent authority on that point. A reasonable precaution on the part of all those who propose to transfer insured property, or to receive it in any of the ways above referred to, if they desire to retain the protection of the policy, is to secure the written consent of the insurance company. In some cases it might be necessary or desirable to take out a new policy. Ignorance of the law on this subject, or want of care and prudence, has frequently led to serious loss among laundrymen. They must remember that what they don't know about the insurance laws, the insurance companies do!

Honesty in the insurers and the insured is the only possible remedy for the evils of present day insurance under old methods. The insured are not altogether blameless, and they need their consciences trimmed at more points than one. So long as seekers after insurance prefer to over-rate the value of their property and pay the additional premiums thereupon, and the companies, for the sake of these additional premiums, will issue a policy on property the real or market value of which they do not understand, or care to ascertain, so long will insurance be a contest between the two parties, and suits at law will follow losses.

Men generally believe, and honestly, too, in most cases, that what is theirs possesses some peculiar value aside from its casually estimated worth, and they will estimate their possessions oftentimes at a higher figure than similar property held by their neighbors. This is natural, and therefore excusable. But the insurance agent should use his own judgment, aided by personal inspection of the property to be insured and by also the opinions of disinterested but competent parties. And more, the agent should have a theoretical, if not a practical, knowledge of the business carried on in the buildings for which insurance is asked.

Instead of employing as an agent or solicitor a person who has merely the gift of fluency of speech, and personal presentability, our insurance companies would do well to have agents for each class of the risks they accept—agents who are, if need be, experts by reason of their familiarity with the nature of their property on which they recommend risks to be taken. Improper representations on either side, and consequent controversies in case of loss would thus be avoided. It is a consummation devoutly to be wished.

MISCELLANY OF LAUNDRY FIRE INSURANCE.

PRACTICAL HINTS OF VALUE WHEN INSURING—THE RELATIONS OF INSURANCE TO CREDIT.

There is so much to be said on this matter of fire insurance for laundries that the writer hardly knows how to sum up within the limitations of time and space. One good result is accomplished, I am sure, and that is, a better understanding all around.

In this campaign we ought all to begin at home. Not long ago I took the matter up in a friendly chat with a young man who has an important work with one of the big ones, having large interests in this territory; and I was surprised to find on how many points he and I—supposedly on the opposite sides of the question altogether—were agreed.

The old but important point of careful construction, dealt with in my papers on fireproof construction, is coming rapidly to the fore; and I doubt not that within a few years rates will be so adjusted to the conditions of buildings that it will no longer be profitable, even for the time being, to build shabbily and carelessly.

A laundry on a single large floor area may be very desirable in many respects, but in some ways it is to be regarded as an objectionable fire risk. When such establishments catch fire, the flames sweep over the whole area with a fierceness which usually prevents firemen from saving anything. The underwriters are likely in the near future to take up more seriously such questions as this. They will insist that certain establishments be divided into departments, with fire walls between them, having fireproof doors which will always be shut except when in actual use. As an alternative, rates for other establishments than those so equipped may be put so much higher that the owner or manager will find it is cheaper in the end to put money into improvements than into excessive, but yet perhaps reasonable, premiums.

Considering that the great bulk of insurance buyers are chiefly alive to the premium rate, and take but little note of the conditions governing that rate, it is refreshing to hear from a business man who confesses his ignorance about some phases of the matter, declares his desire to know, and proves that he is studying. I have no doubt his parallels are to be found by scores in the laundry trade today, but for the time being we will step out of this field, and note a very prominent instance touching the case in point.

At a recent underwriters' convention held in Chicago, Mr. H. N. Higinbotham, whom we all remember as the head of the World's Fair organization, read a paper on "Fire Insurance from a Business Man's Standpoint." This subject he has a good right to consider, as he is a partner in the great dry-goods business of Marshall Field & Co. In the matter of credit he is constantly considering questions concerning the insurance of customers. Frequently the customer, or would-be customer, tries to justify a lack of insurance by urging that his building is well constructed or isolated, or both, or even at the other extreme, because his building is a bad risk and the rate so high that he cannot stand it. But this sort of reasoning will not pass with Mr. Higinbotham, who believes that a business not worth insuring is not worth helping by the extension of credit. Only when the property-holder has a very large number of widely scattered risks can an average be obtained and self-insurance be safe and justifiable; and he is quite often compelled to refuse or cut down credit because of the lack of insurance. He requires a statement of condition to include a specification of the amount of insurance carried, and in what companies, as well as the kind of building and its surroundings. He goes further and says: "It is a note of warning if I find a customer either over or under insured. I always take the liberty of cautioning customers who even temporarily let their insurance lapse."

Were Mr. Higinbotham engaged in the insurance business instead of the dry-goods trade, he would probably not insure a man who did not take and safely preserve at least an annual inventory, and also an intelligible merchandise account subject to inspection. Yet he doubts, and with great truth and accuracy, whether many agents even look at the last inventory, or inquire whether one was taken.

Over insurance is distinctly and doubly wrong. It tempts men to fraud, makes the companies morally if not legally liable for the face value of the policies issued by them, oftentimes subjects the companies to robbery in the settlement of losses, or to enmity incurred by defending themselves. It also deceives the public by a false estimate of the responsibility of the insured, since the amount of insurance carried is often accepted as a guide to credit.

Mr. Higinbotham has evidently been trying to form an opinion satisfactory to himself about supervision. He correctly perceives that supervision by the various states must be dissimilar, and that the costs and the various burdens imposed are finally borne by the great public. And the writer for one cordially agrees with him in his proposed remedy, which is to concentrate all this into one national and paternal system, under the supervision only of the federal government. "An insurance policy would then," concluded the speaker, "be just as good as a bank-note."

There are some practical hints, already indexed by the sub-titles, which experience has suggested to the writer, and which may be of value in taking insurance, and selecting the company offering the same. Before taking out a policy anywhere the capital of the company, and still more the character of the men who control it and represent it, should be scrutinized.

As a rule it is, of course, better to pay a higher rate to a perfectly safe company than a lower one to a poor company, for the best of all reasons, i. e., that one is insurance and the other isn't; or at least you do not know that it is when you pay your good money in return for an acceptance of your risk.

Another point to be considered is the method of doing business. It often happens that without refusing payment altogether the insurers will attempt to shave the loss down to the lowest notch; and the losses incurred by the shaving thus sustained by the insured are often ten times more than the highest rates charged by companies of the very highest standing. In such cases, low rates should offer no inducement to laundry proprietors and owners.

The writer has another hint to offer, and it is an important one. Before paying out money for insurance, the policy should be carefully read and studied from beginning to end. Insurance papers, be it always remembered, are invariably drafted by lawyers, and are often difficult of comprehension by you and I and the other laundrymen. If you do not understand them, you are accepting your part of an important contract without knowing what you or they agree to do; and this is not a safe way of doing any business, much less that on which everything you own in the world may be at stake. Important as this matter is, it is notorious that few of the policies are even read over, either before or after acceptance. It is simply taken for granted that they are all right. Better study your policies in the office of the company that issues them, if it be near at hand, or else in the office where the agent in charge of territory you are in makes his headquarters, or what is better still, at your own desk or fireside, than seek belated light among the burning embers or crumbling walls.

Finally, the writer trusts that he has not said so much that no one else will have a chance. He will not speak again unless spoken to. THE OFFICE MAN.

SOLVENCY VS. INSOLVENCY.

Editor National Laundry Journal:

I have received a couple of personal letters in which reference is made to some of the principles I boldly laid down in my presentation of the unsatisfactoriness of present day insurance, and the need for government undertaking of the same. These inquiries I like first rate to receive, for several reasons. In the first place it shows that these matters are being more carefully studied by laundrymen than ever before, and that there is a spirit of judicious inquiry abroad which does not hesitate to analyze what a talker or writer says, and at times to make him prove his ground well taken or "take it back." In the second place, as one of the large number to whom this problem is an everlastingly perplexing one it is a duty as well as a privilege to participate in any discussion, or be identified with any movement having for its ultimate end cutting loose from conditions long since grown onerous, and binding the craft to annual expense for premiums out of all proportion to the service volunteered by the insurance companies.

My most careful correspondent takes me to task for doubting the solvency of the majority of companies in case of an unlooked-for calamity.. Evidently he has so far had little cause for dealing with the agents of the companies over the question of a loss on his laundry. If so, he is to be congratulated, and I hope he never will. But his experience is not the universal one—if it were, there would be no question of this kind at this time before the house. But, sad to say, others have suffered grievously, and many are today working night and day in the attempt to make up the loss of years' effort gone in that wide chasm which always separates an actual loss from actual reimbursements received from the insurance financiers. To such as these, no other topic can have a greater personal interest, and among the audience of such, scattered from coast to coast, these papers, furnished by myself and others who have been "scorched," will most directly appeal.

It makes a great deal of difference whether the solvency you speak of, brother laundrymen, is of the real or imitation sort. The right sort of solvency, b'gosh, stands out among its fellows like a mountain above a molehill; and when you meet it, stick a pin in the place and remember it well! Solvency means the ability—and it implies also the willingness and the intention to pay all claims in full. Whenever that is not done, the spirit of solvency is broken, no matter whether the reduction be a pushing down of the original claim as a sop thrown to quick settlement or whether some other scheme is worked with the same end in view.

The plan which prints out in large round figures on the policy what you are to receive in case of loss, and then gives you what you can get by hook or by crook, is not likely to get hold of you a second time—unless you are mentally deficient, which we will take for granted you are not. If claims are to be clipped, the old form of expression in the policy, "as many as," ought to be revived, for the sake of truth and intelligibility; let the promise to pay "one thousand dollars or less," or "as many dollars as may be found convenient," be substituted for the statement of definite sums.

The fall of any structure of human making, with all its consequential injuries to some, is not in itself an event for congratulation. And yet, could there be any stability in structures raised in accordance with the laws of the universe, if those laws were not vindicated, distinguished and emphasized by the final downfall of structures raised on wrong principles? He who builds upon a rock would not be wise, or a notable man, if the other house built on the sand stood equally well in the storm. If there were no differences in results, the wise man would be the one who builds in the easiest and cheapest way. The laws which destroy are hard, and oftentimes inflict great suffering; but they can not fail without at the same time setting aside those laws which support and save in times of storm. This is another reason why I am against the irregulars.

"Hot Shot in the Right Spot."

TRYING TO SOLVE THE PROBLEM.

In a recent issue of the London Laundry Record we find an article on insurance, as suggested by Mr. Warhurst, of the N. L. T. P. A., which might be interesting to our American laundrymen who have for some time been agitating a new system of insurance.

If evidence was wanting to prove the practical utility of organization and the value of combining action, it could be found in the facts of Mr. Warhurst's negotiations with the insurance offices by which he has obtained for members of his association a reduction in the rate of their insurance on laundry risks under the Employers' Liability Acts from 30 shillings, first to 7 shillings 6 pence and now to 5 shillings. The high rate of 30 shillings was quoted by all the tariff offices up to the last moment before the act came into force, and although some cutting of rates took place among the insurance corporations, yet it was due to the action of the association insuring as a body that such immense reductions were secured for the laundry trade. The Ocean Accident and Guarantee Corporation, which takes the responsibility of insuring members of the association, is now willing to accept the renewal of policies at the rate of 5 shillings per cent on the yearly wages mentioned above. We are informed that a rebate of this figure will be made to the members of the association which will reduce it very considerably; perhaps 4 shillings per cent.

At the last meeting of the N. L. T. P. A. some interesting remarks were made by Mr. J. Taylor about the Laundry Employers' Accident Insurance Company, Ltd., which was started as a mutual insurance concern on account of the high rates charged by the insurance corporations. Such a scheme as this, as was pointed out in course of the discussion which followed, works very well under ordinary circumstances, but is hardly calculated to stand any heavy disaster, or to bear the strain of prolonged legal proceedings.

The association plan, on the whole, offers a safer foundation, and in the near future it may be possible for the association to go even further in this direction than they may have done in the past. In Germany manufacturers almost invariably enter into corporations for mutual insurance, and the immunity against accidents secured by this proceeding has been really marvelous. If a manufacturer conducts his business carelessly or with improper machinery or dangerous appliances, so that he has an unusual number of accidents on his premises, the other manufacturers who have to contribute toward compensating his workpeople very soon warn him of the fact that his business is badly conducted, and bring strong pressure to bear upon him until he mends his ways. Manufacturers in this country might well take a hint from their competitors in the Fatherland.

DEBTS OF CONSOLIDATING CORPORATIONS.

In the case of Hurd vs. The N. Y. & Com. Steam Laundry Co. (29 Misc., 183) the Supreme Court of this state, special term, holds that "a transfer by a consolidating corporation of all its assets, not made in the ordinary course of business, effecting a definite termination of its regular business, accepted as such by the corporation with which it was consolidated, and followed by a division of the stock of the latter among the stockholders of the former in payment of the assets transferred, is void as against creditors of the corporation making the transfer, and a receiver of it, appointed in sequestration proceedings, may maintain an action in behalf of all the creditors to compel the transferee corporation to account for such assets as constituting a trust fund for the payment of the debts."

A PARTNER'S LIABILITY.

The partners can not, by an agreement among themselves, release each other from a personal responsibility for firm debts. The firm assets are first liable for the firm debts, after which the partners are individually responsible for the full amount of indebtedness. If in an insolvent firm of three members two have no property beyond their interest in the firm, and the third is wealthy, he will be obliged to pay the debts of the firm.

A somewhat difficult question arises when a partner is engaged in business outside of the firm and becomes insolvent. His private creditors may seek to attach or levy upon his interest in the partnership. The general rule is that their claim will be postponed to the claim of the firm creditors. Hence, if the firm be also insolvent, there will be nothing left for the individual creditors. This rule is said to exist not because the firm creditors have a superior right to the preference, but because of the equity existing between the partners. If the individual creditors be allowed to withdraw a partner's interest, this would leave more of the firm debts to be paid from the private funds of the remaining partners. It would be in effect requiring these partners to pay the insolvent partner's private debts.

A common rule is that in levying an execution against one partner for his private debt, the sheriff may take possession of the entire joint property to invoice it, but he can not divide it. He can only sell the partner's interest in it, but can not deliver exclusive possession. The purchaser becomes a tenant in common with the remaining partners, and holds his share in any case subject to an accounting between the parties.

There is much diversity of opinion and practice as to the method to be pursued in this case, and we have only attempted to give above one method of procedure. The student should consult the decisions of the courts of his own state before acting.

That the partnership assets are reserved for the firm creditors is the universal rule, but whether the private assets are reserved for the private creditors is not so well settled. The latter is the law in Illinois and in many other states.—Lyons' Commercial Law.

* * * *

Declarations of alleged partners as to the existence of a copartnership are admissible where the use of such evidence is limited to the partner making the declarations.

* * * *

The mere naked promise of one that another shall share in the profits of his enterprise, where the other furnishes or does nothing toward the enterprise, is void for want of consideration.

ASSESSMENT OF STOCK HOLDERS OF INSOLVENT CONCERNS.

The law passed by the legislature in Minnesota allowing judges of the District Court to assess stockholders of insolvent concerns in order to pay creditors came before Judge Simpson recently.

It appears the assignee of the defunct laundry applied to the court to assess all the stockholders so as to make up the deficiency between the assets and indebtedness. The application was made under the law as above stated, and asked the court to assess the stockholders in the first instance. One of the stockholders objected to make up such deficiency, claiming a laundry was a mechanical corporation within the meaning of the constitution exempting mechanical and manufacturing corporations from liability on stock.

Judge Simpson, who presided at the hearing, after taking the matter under advisement decided that the stockholders of an insolvent laundry company were liable to assessment to make up any deficiency in paying debts. The point is decided upon the decision of the Supreme Court in Cowling vs. Zenith Iron Co., a mechanical corporation within the meaning of the constitution as one allied to or connected with manufacturing.

IS AWARDED 36 CENTS AND COSTS.

A New York laundryman was sued by a patron for $250 damages, and a counter claim was set up by the laundryman for 36 cents. It appears the man left his bundle at the laundry as usual and a month later called for the same. The ticket attached showed the amount due to be 36 cents. A dispute arose over the charges, and when offered 30 cents in settlement the laundryman refused it. The man claimed the original cost of the shirts in the bundle was only 50 cents each (honest man), and he refused to pay exorbitant laundry charges on that account. Result: The court was asked to allow damages to the amount of $250 for refusal on the part of the defendant to deliver the bundle. This complicated case was tried, but as the laundryman had in the meantime interposed a counter claim of 36 cents, the judge dismissed the original suit and awarded the laundryman 36 cents, and saddled the whole cost of the action on the plaintiff, amounting to $10.

A VALUABLE WATER DECISION.

A laundry company in Pittsburg was subjected to a deal of trouble on account of the muddy condition of the water furnished by the local water company. The water was pumped from the Allegheny river, and in times of high water it was full of sediment, thus compelling the laundry company to use a filter. This filter had to be washed out frequently, and the water company's meter metered the water that was used in washing out the filter.

So the laundry company claimed an allowance, and the courts granted an allowance, or rebate, of $150, for the year 1896.

The court held that the water company is required to supply to their customers pure water, and the word "pure" is not confined to considerations of health. It is to be interpreted in a reasonable sense. No one, says the Pennsylvania court, would say that muddy water is pure water. The water company must furnish water that is pure in the common and ordinary sense of the word. "If by a reasonable expense," adds the judge, "they can filter the water when the river is high and muddy, they should do so. The defendant company has shown that this could be done." And so it was decreed that the water company should pay the laundry company $150 on account of muddy water furnished in the year 1896.

This decision, together with the recent Wisconsin decision on account of a typhoid fever case, pretty clearly establishes the liability of water companies if they do not furnish wholesome, clear water. The question of purity is a question of fact, to be submitted to a jury. Men would disagree over it, and the jury box is the place to determine it. As yet it is not well settled what is reasonable purity in a water supply.

LAUNDRY ACCIDENT DAMAGE CASES.

Percy Rhine, who claims to be an expert laundryman, was employed by Bartlett & O'Brien, of Danville, Ill., and through what they claim was carelessness he received severe burns in consequence of an explosion of gasoline and was sent to the hospital. All his expenses were paid by the firm, but on recovery he sued them for $10,000. The case was tried in court and the jury awarded Rhine $75 only.

LAUNDRY AGENCY LICENSES.

Inquiries are frequently made of us concerning town or city ordinances for the taxing or licensing of laundry agencies, which agencies are or may be located in the respective towns for the purpose of collecting laundry work to be shipped out of town to the home offices or laundries, the intent of our inquirers evidently being to use such information for providing their own town with a similar law. This is a question that has disturbed other industries as well, and it has attracted a great deal of attention from those engaged in these other industries and been the subject of much litigation, the decisions thereon differing, as will be seen by the article printed below, which is taken from the Men's Furnisher.

DOWNING THE TRANSIENT.

"A welcome word comes from Bradford, Pa. It appears that one Sceoenfield opened a clothing store and paid $500 license fee exacted under a city ordinance. After doing business a few days he departed. He then brought suit to restrain the city solicitor from paying the $500 into the city treasury. A question was raised as to the constitutionality of the ordinance, a question in which many other cities and towns are interested.

"The case was tried and decided in favor of the city. Unless this decision shall be appealed from in this or other cases the laws of Pennsylvania at least are now definitely known to be in favor of making transient merchants pay well for the privilege of skimming the cream from town after town. We certainly think this is a decision in line with justice and good sense.

"Since the above was in type another case has been decided in the same state. Morris Wormser opened a transient clothing store in Scranton. A city ordinance requires such parties to obtain a license, the penalty for omission under a state law of 1863 being not less than $100, no maximum being fixed. Wormser was fined, but appealed, and Judge Gunster decides the appeal in Wormser's favor.

"The judge says that Wormser represented Alexander Weil, of New York, and therefore was entitled to the United States constitutional provisions to the effect that Congress alone can regulate commerce between the states, and that citizens of each state shall be entitled to all the privileges and immunities of citizens in the several states. The ordinance of Scranton exempted residents from its provisions, an unwarranted discrimination, the judge says.

"Furthermore, the judge scored the law with no maximum limit to its penalties and under which a man could be fined $10,000 and sent to jail for life. He quashed the complaint and discharged the defendant.

"This case would seem to overshadow the former one, and the question naturally arises: Are city and state governments powerless to restrain the transient business?" —Men's Furnisher.

There certainly is an element of justice in requiring the one who skims business to pay larger proportionately for that privilege than the one who takes the entire substance, milk and cream; but from our standpoint we fail to see the same element of justice in requiring him to pay more for the cream than is paid for the entire substance, milk and cream, which is the practical result of requiring a transient tradesman or trade enterprise to pay a license which is more than the permanent one is required to pay; and so far as these matters have come to our observation all cases which have been appealed to the higher courts have been so decided, although some decisions which have sustained ordinances which require these transient concerns to pay a special tax not imposed on the permanent ones would have a tendency to lead to the belief that the said ordinances were thereby well founded, and that they were worthy of adoption.

We conclude, therefore, that an ordinance should be so framed, in order to stand and furnish the best protection to the home laundry, that the agency and the home laundry, and in fact any and all doing business in the laundry line to whatever extent, should pay a license of like amount.

THE FIRST LAW WAS A FAILURE.

LOUISVILLE LAUNDRY LICENSE A FAILURE—DECISION OF THE COURT OF APPEALS AGAINST IT.

In the early part of 1897 the legitimate laundrymen of Louisville, Ky., decided that it would be just to them if an ordinance could be passed compelling every one in the business, agents, agencies or commission men, as well as themselves, to pay a license fee for doing business. They succeeded in getting the bill passed, but it was at once attacked by the commission men.

It appears that some of the laundrymen later objected to paying this license fee and as a consequence the commonwealth secured judgment against them. The case was tried in the city court, and Judge Thompson upheld the Sinking Fund, to which the license fees were to be applied, and imposed the fines. An appeal was taken to the Circuit Court, and Judge Noble dismissed the complaint in all the cases cited. The Sinking Fund then carried it to the Court of Appeals, with a result that was far from satisfactory to the legitimate laundrymen. The court ruled as follows:

> Webster defines a laundry as "a place where clothes are washed," and it follows that a "laundryman" is one whose business it is to wash clothes. We conclude, therefore, from the testimony in this case that the Pearl Laundry, etc., are engaged in the business and occupation of laundrymen—that is, they are engaged in conducting a place where clothes are washed—and are liable for the tax prescribed by the ordinance at each separate place where the laundry business is so conducted.
>
> There is more difficulty in the case of the other defendants (the agents.) Neither of the appellees operates a laundry business in the sense contemplated by the statute and ordinance. They merely receive and collect soiled clothes to be washed * * * As they own no laundry of their own they are not laundrymen and do not compete in any sense with the regular laundries.

This would appear unfair to the legitimate laundries doing business in the city of Louisville, as by it outside laundries can have as many sub-agents as they like in the city, and they are not compelled to pay a license for doing business. The object of the license ordinance was to protect the men who had at great expense erected and furnished large laundry plants with machinery and paid out large sums annually in wages, rents, taxes, etc. But the man who had no other expenses than the business they were otherwise engaged in, such as barber shops, haberdashers, drug stores, little penny stores, and in fact a dozen other callings, were making a clean profit and paying nothing for the privilege.

THE NEW LAW STANDS.

THE LOUISVILLE LICENSE ORDINANCE.

The following is the full text of the ordinance passed in Louisville regulating the licensing of laundries:

AN ORDINANCE

Licensing branch laundry offices and laundry solicitors in the city of Louisville. Be it ordained by the General Council of the City of Louisville:

Section 1. That every place wherein clothing, wearing apparel, bed clothing, household furnishings, linens, wash goods of all kinds and descriptions, or other articles are received to be laundered, if such place wherein said articles are received is not a regularly licensed laundry, shall be deemed a branch laundry office, and each person, firm or corporation conducting such a branch laundry office shall pay into the Sinking Fund of the City of Louisville, for Sinking Fund purposes, an annual license of ten dollars, in advance.

Sec. 2. Each person who shall solicit or collect clothing, wearing apparel, bed clothing, household furnishings, linens, wash goods of all kinds and descriptions, on other articles to be laundered, unless such person be a regularly licensed laundryman, shall be deemed a laundry solicitor, and shall pay into the Sinking Fund of the City of Louisville, Kentucky, for Sinking Fund purposes, an annual license of twenty dollars, in advance.

Sec. 3. Any person, firm or corporation violating any of the provisions of this ordinance shall be fined not less than twenty-five dollars nor more than fifty dollars for each offense; each day the violation is continued shall constitute a separate offense.

Sec. 4. This ordinance shall take effect from and after its publication.

Maxwell Dauis, P. B. C. p. t.
Wm. M. Finley, C. B. C.
Chas. C. Martin, C. B. A.

Approved the 21st day of August, 1899.

Chas. P. Weaver, Mayor.

THE COURT UPHELD THE ORDINANCE.

The whole trouble over the new license law recently passed in Louisville is not yet settled—at least in the minds of a few agents located in the city. The officials have been trying to collect this license fee from all branch agencies—and there are over 150 of them—but it has been up-hill work. A case has just been decided in the local court before Judge McGee, who handed down a written opinion, as follows:

> Under the agreed facts submitted to me in writing I find that defendant conducts a branch laundry office within the meaning of ordinance No. 191, series 1899, entitled "An Ordinance Licensing Branch Laundry Offices and Laundry Solicitors in the City of Louisville."
>
> The only question for me to determine, then, is: Did the General Council have legislative authority to pass the ordinance? That the ordinance may work a hardship to defendant and many others is not a fact that I may consider in determining the Council's authority in the premises. My attention may properly be called to that fact to bespeak my careful attention to the question, but for no other purpose. I have given the matter careful attention.
>
> The charter authorizes the licensing of certain enumerated occupations, among them that of a laundry specifically, and generally of any other business, employment, occupation or profession not herein named.
>
> The Council has authority to license the laundry business, and any inferior business connected with it or of a like nature to it. Defendant conducts a branch laundry office and must pay a license of ten dollars. He may elect now to do this, or have a fine of twenty-five dollars go against him in this prosecution for his default.

Until the ordinance is repealed, or found to be unconstitutional by the higher courts, it must stand, and every one doing business connected with the trade, laundries, solicitors and branch agencies, must pay or be fined $25 for each and every day they neglect to settle. As Judge McGee intimates, it may work a hardship to some, but that has nothing to do with determining the validity of the ordinance.

The effect of this new law will be watched with great interest, and other cities which are suffering from the evil of too many branch offices will undoubtedly adopt it.

If the laundrymen of Chicago, St. Louis, Omaha, Kansas City, and many other places, would investigate this system or ordinance, and then get a similar law passed, they would reap a harvest in a short time that would surprise them.

BELIEVES LICENSE A GOOD THING.

Editor National Laundry Journal:

The laundries of Louisville have in my opinion reached a solution of the agency business by an ordinance which passed both boards of the city council. No man who has any laundry experience will deny that those offices are a detriment to the laundry business. There are in Louisville 600 of these agencies, independent of those conducted by the laundries. They get on an average 25 per cent commission, and they do on an average about $8 per week. They control one-half of the laundry business done in our city, and on this the laundrymen must pay them $1,200 commission which by right should go to the laundrymen, and as 90 per cent of those agencies will close rather than pay a license, the object of this law is to bring the work as direct to the laundries as possible, without passing through so many hands. These offices as they have been conducted in our city bear the same relation to the laundries that the ticket scalper's office does to the railroads. They furnished a way for the laundryman to do his evil work.

Some claim they are operating under the tax paid by the laundries. If such were the case breweries could get out a license and operate all the saloons they pleased by paying one license. Or a wholesale house of any kind could establish branches throughout the city and dodge taxes by saying that they pay on their wholesale house, for instance. The law takes no such view of the matter.

Yours truly, OWEN SULLIVAN.

Louisville, Ky., September, 1899.

Elsewhere is shown that the law above referred to has been tested and proved valid.

The authorities of the following places have passed ordinances for taxing or licensing laundries or laundry agencies: Middleboro, Ky.; Owensboro, Ky.; Louisville, Ky.; Louisiana, Mo.

IS IT CONSTITUTIONAL?

DOES A STATE TAX ON LAUNDRY AGENTS COME UNDER THE INTERSTATE COMMERCE LAW?

An ordinance was passed by the Tennessee legislature placing a tax of $10 on every agent representing a laundry outside the state. Mr. T. L. Metcalf, of Hopkinsville, Ky., had a large number of agents in Tennessee and was incensed over what he thought was an unconstitutional ordinance. He had an agent at Springfield, Tenn., who paid his license, but under protest, and Mr. Metcalf decided to test the matter in the courts. He secured the services of able attorneys and brought suit to recover the amount paid by the agent from the County Court clerk. This case was tried Oct. 4, 1899, and Judge Munford decided in favor of the plaintiff on the 5th. An appeal was at once taken by the defendant, and the plaintiff's attorneys filed a bill of exceptions. This will carry it to the Supreme Court, where it may remain an indefinite period.

NEW LAUNDRY LICENSE LAW IN ARKANSAS.

In the state legislature of Arkansas there was introduced a bill authorizing the municipalities to license, or regulate, soliciting for laundries from other towns or states. The bill came up for its third reading the last week in March and though it was opposed in a weakly sort of way by a few members, it was passed with 49 ayes, 20 nays. This is intended as a benefit to the laundries located in the state and which have had competition from laundries located in other states. Now each one of these will be compelled to pay a license for soliciting trade in Arkansas, if they do business in the state.

CLASS LEGISLATION TO PREVENT A NEW LAUNDRY BEING ESTABLISHED IN SHREVEPORT, LA.

The municipal authorities, the mayor, the council, the newspaper and the church of Shreveport, La., were in throes of a local war, pro and con the erection and conducting of a new steam laundry in that city. From what could be learned after reading the local newspapers, it would appear that a great injustice had been done toward two very reputable citizens in having a special ordinance passed by the council prohibiting or restraining them from erecting and conducting a laundry at a certain place in the city.

Within a very short distance of the proposed laundry is located the First Methodist Church. The mayor and, it is presumed, several members of the council, are communicants of this church, and they are accused by the laundry promoters and a host of their friends of using undue or underhanded methods to prevent the completion of the laundry plant. The plea set forth before the council when the ordinance was introduced was that "laundries were unsanitary, noisy, and consequently one so near the church would prove detrimental to it as a house of worship."

An injunction was applied for by Messrs. Robinson & Simpson and Judge Land handed down his decision, in which he restrained the mayor and chief of police from interfering with the plaintiffs.

The Supreme Court of Louisiana in the case of the city of Shreveport vs. F. F. Robinson, partner of Alva Simpson in the laundry business, rendered its decision as follows: "A municipality has no power to prevent one from operating a laundry by imposing conditions on him different to those imposed on others who use machinery in carrying out their business."

THE C. O. D. RIGHTS.

Editor National Laundry Journal:

I have an agent in a town 100 miles away who is working for commission. He has handled our basket for one month and has not remitted anything. We send a basket C. O. D. for the full amount due us, the agent fails to be worth anything and can not take up C. O. D. on basket. Can we hold that basket against a customer who owes the agent nothing and offers the agent, or even us, the pay for his laundry contained in the C. O. D. basket? Will some laundryman who has had experience in this line, or any one who knows, kindly explain the laundryman's rights in such cases, for our benefit and possibly for others who do not understand their own rights and privileges? A. G. H.

* * *

No, you can not hold a customer's goods for what an agent owes. In fact, a customer's goods can not be held for what the customer himself may owe you, unless you can clearly prove that the debt is for labor and material furnished entirely on the identical goods in question. We know of several instances where the laundryman has gotten hold of a good-sized or valuable package, belonging to one who owes an account and does not pay, and the laundryman has held the goods until the account was settled; but it was merely because the bluff worked, and not because of his right to do so. Occasionally a customer would rather settle and get his goods than invite exposure by legal trouble.

STEALING PACKAGES OF LAUNDRY WORK.

Editor National Laundry Journal:

I am having trouble the past three weeks. Now, price-cutting not having the desired effect, my competitors have gone to houses where my card was out (the laundry package is nearly always laid out ready) and stolen the bundle. Last Saturday one of our customers and my girl got into a wrangle over his package that had not been delivered. When we sifted the thing down we found the Chinamen had gone into his hall, where he always left his laundry every Monday morning in a laundry bag of mine, and got it out and sneaked it away. The customer refused to pay the Chinaman, but that does not seem to stop him. What would you do in a case like this?

Can a Chinaman buy starch and laundry supplies from a Chicago firm? S. E. M.

* * * *

Punishment for the offense is not always possible, for the reason that the property interests involved are largely those of the customer, and the latter is usually not inclined to go into court or to take any other measure for punishment of the offender, for several reasons—the dislike to the publicity involved, the loss of time, and a further reason being that he is usually satisfied that, for obvious reasons, the trick will not be played on him again by the same offender.

The laundry for which such packages have been intended has a slight property interest, in the profit which might have been made by them getting the work as intended, and their claim for damages in the amount of what they would be able to prove such profit to have been would, in our opinion, hold good as against a responsible party in a civil suit. There may further be exemplary damages claimed, inasmuch as the customer may, if paying cash for his work, have it done for a time by those thus stealing the packages; and getting inferior work, supposing all the time that the laundryman of his choice is doing such inferior work, he decides that it is beneath his idea of good work, and thus a reputation is damaged, for which damage there certainly is, or should be, a recourse.

The criminal charge of obtaining goods or money (profit on the work) under false pretense, or by theft, or misappropriation, as the case may be, would surely appear sustainable also.

The idea of a "call card" is a new one to us in its application to the laundry business, but none the less good for that reason; no doubt it can and will be applied to the advantage of many of our readers and their customers, particularly in cases where the patron will not have his work done at stated periods, but wants to wait until his goods are nearly all soiled before sending them to the laundry.

TAKING CARE OF AN ENGINE.

In laundries, as in other workshops where extensive machinery is employed, all work depends primarily upon the engine. It is one of the greatest labor-saving machines, as it is the power it develops which makes possible the use of the various other appliances which displace manual labor. It possesses an importance which in laundries, at all events, is not fully recognized, and as engines are expensive articles, it behooves the owners to take the best possible care of them, so that they will not bcome prematurely worn out.

Some parts of an engine are more important than others. Some parts may be broken and replaced at a nominal expense; with others, breakage or wear is a very serious matter. The most important of all parts of an engine are the steam chest and cylinder where the inherent force of the steam is converted into mechanical power. In these two chambers the slide valve and piston are constantly moving backward and forward under heavy pressure. Two hard surfaces are continually rubbing on two other hard surfaces while carrying a heavy load. In such a condition of affairs, the need of keeping these surfaces well and continuously oiled will be apparent to every one. If they are not kept well lubricated the moving parts will soon wear each other, ruining the engine and necessitating either a very heavy expense for repairs or the purchase of a new engine. If they are only partially oiled the wear will not be so rapid, but the loss due to friction or power wasted will be very considerable.

BREAKDOWNS IN ENGINES AND BOILERS.

The customary report of Mr. Michael Longridge, M. Int. C. E., chief engineer to the Engine and Boiler Insurance Company, contains its usual useful budget of information. It appears that 166 breakdowns came under the notice of the company last year. Of these, 28 were traced to negligence on the part of owners and attendants, and 51 to faulty material or construction. Mishaps to cylinders were unusually numerous, generally owing to unsuitability of the parts for high pressures and speeds now commonly adopted. Bed-plates and other portions of engine frame work also show a rather unfavorable record, but in nearly every instance breakages were due to settlement of the seating, in consequence of saturation by oil for bearings. In the matter of boilers, many defects discovered in the course of examinations would undoubtedly have led to explosions. While admitting the fact of great improvement in the construction and condition of steam boilers, Mr. Longridge points out that too frequently safety valves are found stiff and inoperative, water gauges defective, blow-off cocks leaky, and joints blowing. Of 59 mishaps last year, 32 were caused by deficiency of water, and the remainder by accumulations of deposit and grease. The causes leading to these conditions may thus be stated: Constructive defects, 14; inattention, 27; unsuitable water, 7; unascertained, 11.—Fielden's Magazine.

TO COVER IRON PULLEYS WITH LEATHER.

With a given tension of belt nearly three times as much power can be transmitted by a leather-covered pulley as with a smooth iron surface.

It is a comparatively easy matter to cement leather to the face of a pulley so that it will stay for an indefinite length of time, in fact, until the leather is worn out or it is forcibly torn from the pulley. It is as easy to make such cement joint as it would be if cementing to wood or other porous substance.

Any good glue can be used if suitably prepared and carefully spread on the iron surface. For such purposes a given amount of glue should be covered with an equal weight of water, and the whole let stand for twenty-four hours until the water is completely absorbed by the glue. The mass should then be heated in a water bath until the glue is melted. This makes a concentrated glue solution. This is to be spread on the surface of the pulley after the leather has been suitably prepared.

A strong solution of tannic acid should be used for moistening the leather before it is applied to the glued surface. The solution should be applied warm. The surface of the pulley should be roughened by cross filing or the use of acid before the glue is applied, and the glue should be warm when the application is made. The leather used for covering pulleys may be pieces of old belting or split leather. The size of the pulley can be increased considerably by the use of the leather covering.—Exchange.

FILLING CRACKS IN CASTINGS.

Many methods for closing cracks or pores in cast iron have been devised. Chemical or other products, such as salamoniac, are often used to cause the formation of iron salt, easily oxidizable, which in a short time gives a certain quantity of hydrated oxide of iron. This is made use of very often to stop up leaks which develop in metallic cylinders. This method is, however, a somewhat lengthy one, several days being oftentimes necessary to obtain satisfactory results; that is to say, entire absence from leakage. A method of closing cracks or pores has lately been devised by M. A. Demalght, of Brussels. The cylinder is filled with a certain quantity of perchloride of iron. The liquid is then compressed until globules appear on the external surface. The cylinder is then impregnated with perchloride of iron right through, as regards its thickness. Any perchloride in the cylinder is then emptied out, the cylinder being then wiped until the polished surface is again made brilliant.—Iron Trade Review.

CYLINDER LUBRICATION.

BLACK DEPOSIT IN STEAM CYLINDERS.

It has often been the case that an engineer, upon examining the interior of his steam chest and cylinder, has found a mass of thick, gummy paste, and attributed its origin to the cylinder oil used. A chemical analysis would show that it consisted of a small percentage of oil and a large percentage of "boiler mud"—magnesia, silica, lime, or oxide of iron or rust from the inside of the steam pipe, etc.

A number of tests were made some years ago by Professor Denton, of Stevens Institute, to determine the cause of numerous complaints of this character. The results of these tests showed that the difficulty could not be attributed to any deposit, and after changing to another grade or brand the trouble disappeared, and he found no more deposit. This can be explained as follows:

In the first instance the oil was probably of a heavy, dense nature, high in viscosity and fire test and very adhesive; in short, a first-class lubricant. Whatever solid matter came in contact with the oil adhered to it; while in the second instance the oil was of a lighter nature and low in viscosity, and the solid matter was carried over with the steam from the boilers and passed out with the exhaust steam, without any of it adhering to the lubricated surfaces.

There is nothing used in the manufacture or compounding of any cylinder lubricant that of itself can form or cause a deposit of this nature. The highest temperature that can be attained in a steam cylinder can not be greater than that due to the initial pressure of the steam—viz., 338 degrees F. at 100 pound pressure—while the cylinder oil, to bring it to its proper viscosity and fire test, must be subjected to a continuous heating of from 400 to 600 degrees. Visible evidence of the carrying-over of solid matter with the steam may often be seen at the leaky joints of the steam main and around the stop valve and throttle valve stems. The remedy for complaints of this kind is to keep the boilers as clean as possible. The use of a separator in the steam line to trap off the condensation, and the use of only just enough cylinder oil to lubricate the surface nicely, will also greatly remedy it, as it is the surface oil that mingles with the surface matter, thus forming the thick, black paste or gum.

It is good engineering practice to provide a separator in the steam line with drain pipe and trap, to prevent the water entering the valve chest, as water is the worst known enemy to perfect lubrication. This will apply to all engines as well as pumps, and a separator attached to the steampipe not only insures against damage from water, but enables the engineer to get better results from his cylinder oil. But instances have been known where the steam was free from moisture and yet the valves groaned badly, and neither the grade nor quantity of oil used had any effect. An investigation showed that the valves had worn to such a perfect fit on their seats, and the surfaces were in such close contact, that neither oil nor steam could penetrate between the surfaces. In one instance in particular that came to the writer's notice the exhaust valves of a large Corliss engine groaned so badly as to be heard all over the engine-room and could not be made to run quietly, no matter how much oil was used. On examining the exhaust valves a large bright spot three inches or more in diameter on the under side at the back end of each valve was found; these spots were as smooth as glass, and when touched with a piece of white paper did not show a trace of oil, while the rest of the valve surface was covered with oil. Corresponding bright spots were found on the valve seats. A few strokes with a smooth file over these bright surfaces remedied all the trouble, and after that these valves were as quiet and well-behaved as any well-cared-for engine could wish to have.

It is often the case that engineers complain that their engines require more cylinder oil when running with a heavy load than when running with light; that when running with a normal load a small amount of oil will keep the valves quiet, but when the load is heavy or is suddenly thrown on, as in street railway, rolling-mill, saw-mill or similar work, the valves will work hard and groan, and sometimes cause the valve rods to vibrate badly, which is very annoying to an engineer who takes pride in having at all times quiet and smooth-running machinery.

The cause of this trouble is often attributed to the quality of the cylinder lubricant used, or that when the engine is doing heavy work it requires more oil than when the load is light. A careful investigation would show that the cause of the trouble above referred to was that when the engine was laboring under a heavy load, or the work thrown on suddenly, water was drawn over with the steam from the boilers or from the pockets in the steam pipes. Evidence of this can be seen by the excess of water dripping at the valve stems, piston rod and drip cocks. The water carrying with it whatever sediment it may contain, washes and scours off the coating of oil from the surface of the cylinders, valves and valve seats. This coating once washed off, it requires some time to form a new coat, and in the meantime the valves work hard and stiff, and the engineer has to apply the oil freely with the hand oil pump to bring the valves to a smooth running condition as soon as possible.

But it can readily be seen that no matter what horse power an engine may be developing, if the speed remains constant the internal friction will be constant; if the speed is constant, the piston will travel over the same amount of cylinder surface, no matter what the load, and therefore, under ordinary conditions, an engine would not require any more oil with a heavy load than with a light load.

With an automatic cut-off engine the valve travel would vary according to the load, but not enough to make any difference in the amount of oil required.

A well known writer, as the result of numerous experiments, has said that "the internal friction is sensibly independent of the magnitude of the load or of the power developed, but that it is variable with speed and efficiency of lubrication in a very observable degree."—Power.

FALSE ECONOMY.

We often wonder, says L. P. Burrows in the Inland Engineer, why we fail to get a greater percentage of efficiency out of our steam-generating apparatus and machinery, but it matters little how careful we design our plants or how improved or modern the machinery may be if it is placed in ignorant or careless hands. The economy of fuel which might be secured may be quickly swallowed up by the results of faulty operation. The owner congratulates himself, perhaps, that he has the most efficient plant that can be designed, arranged in accordance with the most advanced practice in steam engineering.

There is hardly any line of industry in which the steam plant is not more or less complex mechanism. The engines, boilers, pumps, etc., are simple enough in themselves; but in connecting them together and adapting them to each other and to their various uses, a complicated system of piping and valves is brought into play, changing the plant into an elaborate and intricate structure. Under these circumstances, an economical engine and boiler do not necessarily make the plant, as a whole, economical. If a careful test of each of these principal factors of the plant is made, and it shows that the engine produces an indicated horse power by the consumption of 1.5 pounds of coal per hour there is no surety that the plant, as a whole, uses coal at this economical rate. Especially is this statement true in that class of everyday work where the false belief is held that a plant which is well designed is necessarily economical whether handled properly or not.

The prevailing idea among the owners of steam plants and the men employed by them to run the plants is, that the only species of test which is required to keep the plant in good shape is that furnished by the frequent application of the indicator to the main engine. We find nearly all important plants nowadays furnished with indicating apparatus, and the men in charge are expected to make daily use of it.

There are few plants in operation where it is known positively that the plant, as a whole, is operating with its highest efficiency. The economy of the engine may be known and the efficiency of the boilers under certain conditions, but of that other element in the equipment there may be no knowledge whatever.

It is the efficiency with which the coal is used which is the important thing. In a word, the important end in view is the attainment of economy from the whole equipment, when in daily operation, subserving the objects for which it was designed.

We are led by these considerations to the question, "How shall the results aimed at be secured and maintained?" The answer is briefly—test the plant in its working condition when operating in the manner which the designer planned, and determine how much coal is required to do the work. Having done this in such a way as to be assured that every member in the plant is performing efficiently, a standard performance is established with which to compare future records of daily coal consumption. With data thus found, it is merely necessary, at any time that the information is desired, to compare the quantity of coal burned in a day with the established standard, and ascertain whether the full degree of economy is realized in the practical operation of the plant. If the comparison is unfavorable, evidence of wasteful operation is at hand, and a proper search will fix its location and determine its remedy.

BELTING.

WHAT IT IS MADE OF AND ITS CARE.

(A paper read by Philip Dana, Westbrook, Me., at the meeting of the New England Cotton Manufacturers' Association.)

The saying that you can't make a better razor than there is stuff in it would apply equally as well to belting.

The standard leather belting today is undoubtedly the oak-tanned leather belting.

Cotton-woven, wire-woven, rubber and numerous other kinds of belts have been tried and have failed to last, to transmit as much power or give as general satisfaction as the leather belt, except in cases of extreme moisture or steam as in a dyehouse, where rubber belts have succeeded the leather ones.

Steer hides are largely used for the best belts. The center of the hide from the shoulder nearly to the tail, the lower part of the sides and the belly being cut off, is used for the best belts, as this is of fine grain and solid, stretching but very little. The very center of the hide, about twenty inches in width, and from four and one-half to five and one-half feet in length, according to the size of the butt, is used for the larger belts. The strip on each side of this a few inches wide is used for the smaller belts.

Ordinary belting weighing from fifteen to sixteen ounces to the square foot will vary in different tannage in tensile strength from 450 to 1,000 pounds to the inch. The hide from the neck, the lower part of the sides and the belly, being coarse and spongy, stretches badly and is not used in the best grades.

It takes six months to properly tan leather. It is then stuffed or curried with tallow to make it firm and pliable. This keeps it from cracking and adds considerable to the weight. After being curried, which is quite a complicated process, it is stretched until nearly all the stretch is taken out.

The strips of belting should be put together by short laps six to eight inches long. A longer lap makes the belt stiff and is more apt to include a poorer part of the hide.

In putting laps together I prefer the use of cement only. We find that rivets wear off, catch and come out, spoiling the surface of the belt, letting it drop to pieces long before it is really worn out. It is the same with double belts, which are stitched on both sides; the stitches wear out long before the belt does, letting the belt drop to pieces. The stitches also spoil the smooth surface of the belt.

Some six years ago, in putting in a large belt, we were very much put out to find it full of worm holes. We complained of this and were told that the holes did not injure the hide. Some time after we learned that wormy hides could be bought two or three cents per pound cheaper than perfect ones.

As regards the life of a belt, little can be said with accuracy, so much depends on the conditions in which it is used. A large driving belt on large pulleys, and not overloaded, should, if properly cared for, last from twenty to thirty years. We have two belts which have run more than twenty-five years. An agent of a large mill says that he has belts doing good work after running for thirty years. Cone belts do not last more than two or three years, and some a much less time.

A belt constantly running from a tight to a loose pulley, of course, gets racked a good deal and can not last more than ten to fifteen years. In our picker room the belts were cared for by two men. The one kept his belts clean and used but little belt dressing; the other, when a belt slipped, instead of cleaning it or taking it up, laid on a lot of belt dressing. The first one's belts are almost as good today as when new, while the other one's are badly rotted and almost unfit for use. In a room full of dirt, like a card room, belts should be carefully carded and then dressed very lightly once a week.

Whenever possible, belts should be made endless, thus insuring smooth running and a longer life; the place where the belt clamps or lace leather is put in always breaking first.

In England a belt is being quite extensively introduced. It is made from the hair of the Indian buffalo, which is woven and then painted on both sides. The claims for this are that it has more elasticity and resistance to wear and water than leather belting.

Another belting, very pliable indeed and recommended for use on small pulleys and in places where the belt runs with a twist in it, is the so-called Indian tanned leather belt.

In figuring for main drives, if possible, the slack should be on top instead of underneath the pulley. This allows more belt to rest on the pulley, resulting in less slipping and more power can be had with a slacker belt.

The best belt is the cheapest if properly cared for and not overloaded.

HOW TO PUT ON A NEW BELT.

It is always best to put the hair side of a belt against the pulley. Some prefer, or, rather, without forethought put the flesh side of the leather, but, as an old and experienced superintendent of a large mill once remarked, "You might as well try to get the power from rough pulleys, as two smooth surfaces will always give more driving power than two rough ones. Any one can be convinced of this by putting the two systems to test on any class of machinery. Be careful to have the edge of the laps with the work, and the heads of the rivets next to the pulley and much trouble will be averted. In running through narrow spaces, if the lap catches, the belt is soon destroyed."

A MECHANIC'S MAKESHIFT.

Around every laundry there should be—and there generally is—a man of all-around accomplishments. Such an individual is worth an extra bit of salary several times throughout the year, when he is called upon, often without warning, to fix something that has gone wrong. In such cases he is usually handicapped by the lack of proper facilities for doing his special work, for the reason that a tool-room is a rare accessory to a laundry, and he must either go about seeking for what he lacks, or depend upon mother wit to help him out. A few days ago a correspondent of this paper was in a laundry in the country, whose proprietor, not being able to hire the proper help just then—and the work was urgent—was playing carpenter to a small job. He became tired of using a dull saw and resorted to a novel, though ingenious, expedient to file it. Not having a suitable vice at hand, he inserted his saw back downward in a groove which he had made with the face of the saw in the timber on which he was working, and proceeded to file it as if it were held in the most approved manner.

CARE REQUIRED IN FILLING LUBRICATORS.

Great care should be used by firemen and engineers in filling lubricators. There is great danger from the glass bursting. Only a short time ago one burst in a building near us, but fortunately for the engineer, it did not hit him. Another case of the bursting of a lubricator glass, which resulted more fatally, is the one in which Charles Prescott, employed at the Laconia car shops as fireman and engineer, met with a serious and peculiar accident. He was standing near the engine when the lubricator glass, filled with oil, suddenly burst, without any apparent cause, and a large piece of the broken glass struck the unfortunate man directly in his left eye. While it is not very often that these glasses break, we think it would pay an engineer to take a little of his spare time and cover these glasses with wire gauze or wind them with common wire.—Exchange.

CORRESPONDENCE.

This department of The National Laundry Journal is always open for discussions on any subject relating to the trade, but the editor will not necessarily indorse the opinions of the contributors. Anonymous communications will not be accepted, or published, but correspondents must attach their names, not necessarily for publication, but as an evidence of good faith. All letters will be subject to revision and correction.

WHICH WOULD BE THE CHEAPEST?

Editor National Laundry Journal:

I am running a small laundry consisting of one shirt ironer, three small washers and one extractor. I run my machinery about forty hours per week and get my power from a shop close by, as I do not have any boiler or engine of my own. The power costs me about $6 for the forty hours. Would it be cheaper for me to run the machinery with a gasoline engine and use a separate generator to make steam and heat the water to wash and cook the starch?

A SUBSCRIBER.

Six dollars for forty hours' use of what little power he evidently needs to run his machines seems to be considerable more than it is worth.

We would advise "Subscriber" to investigate the cost of a gasoline engine and other equipment needed, and if he can figure out that a saving can be made by it there will be no question about the advisability of the change. Six dollars a week for power means a cost of $312 a year. Now a complete outfit such as he possibly needs to run his machinery and furnish hot water by the steam from the generator would hardly cost him that. His gasoline would cost him little if judiciously used. However, it is a question no one but himself can decide after making inquiries as to first cost and then the cost of operating afterward.

* * *

Editor National Laundry Journal:

I find a brother paying $6 for power for forty hours. We can beat that.

I am running one ironer, one starcher, one 100-shirt washer, one body ironer and a 25-inch exhaust fan with a three and one-half horse power gasoline engine that cost me, new from the factory, $170.

We run or use power on the average thirty-nine hours per week at a cost of three and one-half cents per hour, or $1.37. I use for heating water, cooking starch, etc., and for heating purposes, an eight horse power fire-box horizontal boiler. We pay at the rate of $1.75 a ton for coal and use about four-fifths of a ton in a week, at a cost of $1.40; making total cost of power and steam $2.77 for thirty-nine hours.

For an additional investment of $50 a small steam engine could be had and at times used to advantage.

I have had three years' experience running in this way, and will say that I would not dispense with a gasoline engine in a small laundry. Yours, HARRY D.

WHICH WOULD BE THE CHEAPEST?

TWO CASES OF COMPARISON.

Editor National Laundry Journal:

Regarding the advantage, if any, of purchasing a gasoline engine and generator, instead of "renting" power, "H. C. K.," a well known laundryman in the state of Maryland, in a crisp ten-line note says: "In reply to 'Subscriber,' I run a gas engine. Gas $1.25 per thousand. My gas bills per month average $12, with separate boiler for heat. My coal bill is $4 per ton, or $8 per month. The time the gas is in actual use is about forty hours per week. 'Subscriber' can easily figure the cost—engine, $400; steam plant, $200; add wear and tear.

"H. C. K."

* * * *

Now, "H. C. K." is not very explicit in his effort to assist "Subscriber," but we surmise his time was limited when he wrote, consequently did not appreciate, but we, and any one else would readily understand him. Assuming it costs him to run his plant $20 per month only, he is paying for forty hours of power per week $5, which is less than "Subscriber" claims to pay for rented power.

* * * *

Bearing in mind that "H. C. K." is paying $1.25 per thousand for his gas and figuring on that basis, while the expense for gasoline, it is claimed, will cost but about half that amount, and the fact that the plant operated by "H. C. K." is larger than the one operated by "Subscriber;" and that "H. C. K." makes his power and steam cost but $5 per week, it is safe to say that "Subscriber's" plant ought to be run for less than $4.

HOW HE MADE A SUCCESS.

Editor National Laundry Journal:

I have read over several times an inquiry by "Subscriber." I have had six years' experience with a small laundry in a town of about 3,000 with work ranging from $45 in the winter to $65 or $70 in the summer. I bought a 12-h. p. boiler, new, a 29x48 second-hand washer, a new 20-inch extractor, some shafting, belting and pulleys, and cobbled up an old engine that was in a scrap heap. I now have as an outfit a good boiler, a nearly new 8-h. p. engine, a 20-inch extractor, a dip wheel, an old Dewey shirt starcher, 5-18-inch rack dry room, band ironer, combination bosom machine, 36-inch steam-heated body machine, a No. 10 American collar ironer, and two 29x48 washers.

I believe "Subscriber" can save some money by putting in his own power plant. I could if I was paying $6 a week as he is, and I am running about forty hours per week. I can turn out $50 a week with one ton of coal that costs me $1.25 put in the house. ELI.

ABOUT EXHAUST STEAM.

Editor National Laundry Journal:

I would like a little light in regard to heating water in a 600-gallon tank by exhaust steam from a 15-horse power engine. Yours truly, F. J. ROESSNER.

Hagerstown, Ind.

We certainly would recommend the use of exhaust steam for this purpose. No laundry should be without a hot water tank, and no better use can be made of exhaust steam.

As to the details of a plan of heating we should know for what other purposes you are using or intend using your exhaust, and the location of those uses.

The best source of advice on those details would be a local practical steamfitter, or possibly your engineer.

Details as to the making of heating coils and manner of connecting them will be found on page 71 of the book "The Steam Laundry and Its Methods."

WHY DO BOILERS EXPLODE?

The New York Engineer, in reply to a correspondent, gave in a recent issue a pretty complete answer to the above query.

This correspondent points out that sometimes a boiler will explode under much less pressure than it had previously carried, hence the plates must have become weakened. He desires to know if suddenly opening a steam valve or the bursting of a steam pipe has ever caused a boiler to explode, and if so, what is the philosophy of it?

It is a well-established fact in the mind of the writer that a pipe or a boiler may explode under an apparent pressure much less than what is ordinarily carried, and the following incident was the cause of the above-mentioned conviction: For several years we had charge of a plant that carried eighty pounds pressure without accident, but one Monday morning the throttle valve was burst like an eggshell when there was only ten pounds pressure on the boiler.

The explanation of the apparent inconsistency is as follows: The steam gauge indicated 10 lb. pressure, but there was water in the steam pipe, and as soon as the valve was opened to let it out—for there was no other way to dispose of it—there was a movement of the water, and as the steam quickly followed, and was condensed on coming into contact with it, a partial vacuum was formed. As the steam and water rushed forward to fill this space, violent water hammer was the result, and this shattered the valve.

We have stated that a boiler may explode under an apparent pressure much less than that ordinarily carried, and also that there was only 10 lb. pressure at the time of this accident, and this is true if we follow out the usual course in mentioning such things; but in reality there was very much more pressure on at the instant that rupture occurred, as otherwise there would have been no trouble, but this pressure was caused by the ram-like motion of the water; therefore the pressure was raised instantaneously, and it fell as quickly as it was raised, because the rupture of the valve liberated it. Now, this pressure undoubtedly caused the pointer of the steam gauge to vibrate excessively, for the spring in such a gauge is sensitive, and responds to every change in pressure, but it was done so quickly, and the report of the bursting valve caused enough confusion for an instant to distract attention from the gauge; hence nobody knows how much pressure was indicated by the pointer.

We have mentioned this accident somewhat in detail because there are conditions under which a boiler may be affected by water hammer in the same way, causing a rupture.

There is proof sufficient to show that a very great pressure may be quickly generated in this way, because tests have been made of pieces of pipe that have been ruptured in such cases, and it has required more than 2,000 lbs. to break them.

This excessive pressure cannot be generated by quickly opening a valve, under ordinary conditions, provided only saturated or superheated steam is in use, for exhaustive experiments were made several years ago by a man who endeavored to burst a boiler by very suddenly opening the throttle valve, but the boiler did not fail until the gauge indicated enough pressure to burst the boiler, using a standard rule for determining its bursting pressure. If there is water present, a very much lower pressure than that ordinarily carried may complete the mischief, as we have already shown, and this water may be present when it is not suspected.

It is a well-known fact, however, that the boiling point of water is raised as the pressure upon it is increased, and as a matter of course it is lowered as the pressure is decreased. The consequence is that if abnormal measures are taken to very suddenly relieve the pressure upon the surface of water in a boiler, it may contain heat enough to cause it to flash into steam, and if this is not liberated at once a very great pressure may result; but the whole process will be completed very quickly, leaving no time for careful observation.

Careful experiments have demonstrated that when a certain stress is put upon a piece of iron or steel, then removed, and the process repeated many times, the metal becomes fatigued or crystallized, and when in this condition it becomes unsafe under the ordinary working pressure, and may fail under even less than has been carried upon it. For this reason boiler inspectors order the pressure to be reduced upon boilers that give evidence of being affected in this way.

We believe that the above answers the questions asked by our correspondent, but while we are on the subject it will be well to mention some other things which do a boiler no good, to say the least.

In many places the engines are too small to do the work with a reasonable pressure on the boilers; therefore more is put on until the machinery is run up to speed. A boiler should be thoroughly examined by a competent inspector, and its safe working pressure determined, after which it should not be raised simply because the safe pressure for the boiler will not keep the engine up to speed.

We do not believe in letting the water get too low in a steam boiler, but nevertheless it is done many times without serious consequences. Professor Thurston reports the results of three efforts made to explode a boiler by letting the water get low or entirely out of the shell, continuing the fire until the plates were red hot, and then pumping in cold water.

In the first case a vacuum was produced; in the second the steam pressure rose rapidly, but was easily relieved by the safety valve; and in the third the boiler violently exploded. This shows that some slight difference in the conditions may make a vast difference in the results, and as these differences may not be fully understood by the boiler attendant, it is better to be on the safe side, and cover the fire as soon as it is found the water is low. We can hardly afford to take one chance in three of being blown into pieces from this cause. Feeding a boiler with cold water under any conditions is positively dangerous, and should never be attempted.

The practice of leaving boilers with partially-banked fires, without taking precautions to keep the water in circulation, then suddenly opening the throttle valve, is not good practice. It is much better to keep an injector in operation, for that will use some of the steam and keep the water in circulation.

Many boilers are driven so hard in order to supply the required amount of steam that the water is repelled from some parts of the heating surface, and only dry steam is in contact with the plates. This will cause injury to the metal in course of time, and may result in a disastrous explosion; therefore more boilers should be added so as to bring the amount of water evaporated per hour within reasonable limits.

Scale and sediment are allowed to collect in boilers until the water cannot reach the metal, so that in course of time the life is burnt out of it, leaving it too weak to withstand the ordinary working pressure. These are some of the causes for boiler explosions, and while it sometimes is rather difficult to locate the exact mistake or blunder that results in loss of life and destruction of property in this way, there are very few cases that are in the least mysterious.

SCALE IN BOILERS.

It has long since been satisfactorily demonstrated that 1-16 of an inch of scale requires an expenditure of 12 per cent more fuel; a scale of $\frac{1}{8}$ of an inch 30 per cent and a scale of $\frac{1}{4}$ inch 60 per cent more fuel, and as the thickness of the scale increases this ratio also increases rapidly.

Take for instance a plant using ten tons of coal per week, at $4.50 per ton, when the boilers are clean and free from scale, the cost would be $45 per week.

If these boilers should scale $\frac{1}{8}$ of an inch, it would require thirteen tons at a cost of $58.50 per week.

One-quarter of an inch of scale (and it will surprise many owners to learn that the number of boilers that are scaled to this extent is very large) would require sixteen tons of coal at a cost of $72 per week to do the same amount of work that could be done by ten tons at $45, were the boilers clean.

In other words, they are wasting $27 per week. The loss when this amount is multiplied by five or ten may be easily computed.

Ascertain how much coal your plant is using and see how much you may be throwing away.

Were this the only disadvantage it should be sufficient to attract the attention of every power user, but there are other equally if not more important, for instance:

To raise steam to a working pressure of 90 lbs. the water must be heated to a temperature of 320 degrees F. This, through a ¼-inch shell, requires a heat on the external surface of about 325 degrees F.; but, with a ½-inch scale, 700 degrees—almost a red heat—is required.

The higher the temperature at which the iron is kept, the more rapid is the process of oxidation, and at any temperature above 600 degrees F. it soon becomes granular, brittle and crystalline, with the loss of its physical properties, and with no more strength and tenacity than ordinary cast iron. In such a condition the boiler soon wears out and is liable to explode at any moment.

Every engineer who has the interests of his plant and employer at heart, and every good engineer has, should see that his boilers are kept free from scale, for a man who can save his employer $13.50 to perhaps $50 per week is certain to receive part of that as an addition to his wages, besides having the satisfaction of saving himself the labor of handling from three to ten tons of coal additional.—Engineers's Magazine.

SOME THINGS ENGINEERS SHOULD KNOW.

We are indebted to the Engineers' Magazine for the following:

WHAT IS THE MOST IMPORTANT FITTING ON A STEAM BOILER?

To construct a steam boiler, the first and most important thing to know is the maximum working pressure per square inch that is to be carried, as from this, and the power which the boiler is to develop—is calculated, the proportions which the various parts will have to each other, as thickness of plate, kind of joint, diameter and pitch of rivets, diameter and length of the boiler and diameter and number of braces. Such being the case, is not the safety-valve the fitting on a steam boiler of first and prime importance, and the one which should receive the closest attention from those in charge.

When a boiler has a safety-valve large enough to carry off all the steam the boiler will generate, all other outlets being closed, and the valve is in good working order, and set to blow at a pressure which is not beyond the maximum, as calculated from the construction of the parts, and also taking into consideration the general condition of the boiler, the danger attending the generation of steam under pressure, is to a great extent obviated.

It should be a fixed rule with all who have the care of boilers, to have the safety-valves eased up daily, when the pressure on the boiler is near that at which the valves are set to blow. As then the working of the valve can be better judged than when much power has to be exerted to raise the valve off its seat, the pressure on the boiler being say, twenty or thirty pounds below the point of blowing-off.

The above is applied more directly to high-pressure boilers, but it is equally important that the safety valves on low-pressure heating boilers should be lifted daily, as in many instances these boilers do not receive continuous attention, as do the high-pressure ones.

* * * *

The following rule to find the horse-power of a pulley is given:

> Multiply the circumference of the pulley in feet by the number of revolutions per minute and this product by the width of the belt in inches, divide the result by 600.
>
> This rule is founded on the fact that ordinary single leather belting, with a tension of fifty-five pounds per inch of width, requires fifty square feet of belt surface passing over the pulley per minute for one horse power, fifty square feet of belt surface

passing over a pulley are equal to a width of one inch running 600 feet per minute.

Shafting should never be placed directly over another shaft, the angle of belts with floor should not exceed 45 degrees and the nearer a horizontal position, with the slack on top the more satisfactory belts will operate.

Leather covered pulleys have, it is claimed, the advantage of being able to transmit about 33 per cent more power than the plain iron surface.

* * * *

A correspondent wants to know what percentage of strength a steel plate has over iron of equal thickness. The answer is as follows:

The tensile strength of wrought iron plate ranges from 45,000 to 70,000 pounds per square inch, and that of steel plate from 75,000 to 96,000 pounds per square inch. Thus from these figures, iron plate has only about 60 to 62½ per cent of the strength of steel plate.

* * * *

A good engine foundation is explained as follows:

Holding down bolts should be loosened and a number of iron wedges driven in between engine frame and foundation, driving each wedge a small amount at a time until by the combined action of all, the frame is raised the required amount.

Mix a small quantity of Portland cement thick enough to retain its shape, lay a narrow ridge around edge of the foundation, about one-half an inch from the frame, and of sufficient height so that the sulphur, when flowed to the bottom of frame, will not overflow.

When the cement has hardened, all is ready for pouring. Sulphur melts at about 239 degrees F., and boils at 570 degrees.

Any vessel will do for heating, but an old iron tea kettle is very convenient for pouring.

If a thermometer is available it will save some trouble and risk of overheating, as it is desirable to have the sulphur as hot as possible, and it can be safely heated to about 500 degrees F.

A little experience, however, will show the proper heat, as there is a wide margin between being hot enough to pour well, and the temperature at which it will ignite.

Pour slowly, so as to give the liquid a chance to fill all spaces, and if carefully done a satisfactory job will be the result.

* * * *

Safety valves:

Lever safety valves when attached to either marine or stationary boilers shall have an area of not less than one (1) square inch to two (2) square feet of grate surface, and the seats shall have an angle of inclination of 45 degrees to the center line of their axes.

The valves shall be so arranged that each boiler shall have one separate safety valve, unless the system of piping is so arranged as to prevent the possibility of shutting off the valve from the boiler.

Spring loaded safety valves constructed so as to give an increased lift by the operation of the steam after being raised from their seats, shall be required to have an area of not less than one (1) square inch to three (3) square feet of grate surface, except when used for water tube, coil, or sectional boilers carrying 175 pounds and over, when the ratio is one (1) square inch to six (6) square feet of grate surface.

* * * *

WHAT IS MOST IMPORTANT TO LEARN ON TAKING CHARGE OF A STEAM BOILER?

To learn the feed water system and all its connections, and the proper handling of the feed apparatus, under adverse conditions especially; also to learn to use any auxiliary means of supply, which is seldom or never used, as in case of an emergency, it often happens that everyone forgets such an auxiliary or how to use it.

To learn the pressure at which the safety valve is set to blow, and that it blows freely at that pressure, the steam gauge working properly.

To learn if the water column is properly located and what height of water is over the fusible plug when the water is at the bottom of the water gauge glass.

To learn the internal conditions of the boiler, and the proper intervals between cleaning and washing out, which latter can be decided upon only after several successive washings out and using good judgment.

* * * *

HOW OFTEN SHOULD THE BLOW-OFF BE USED? WHEN SHOULD IT BE USED?

The blow-off valve should be used at least once every day, if only to merely open and shut it, to be sure that it is in proper working order.

The amount of water to be blown from a boiler daily, depends on the internal condition of the boiler, the quality of water and the solvents—if any—used.

The blow-off should be used when the draughts are closed, and no steam is being drawn from the boiler, as then the water is in a comparative state of rest, and the impurities held in suspension under a rapid movement of the water, while steam was being generated would subside to the lower part of the boiler—their specific gravity being greater than that of the water—and be blown out.

* * * *

WHAT IS AN ENGINEER'S FIRST DUTY ON TAKING CHARGE OF A STEAM PLANT?

To familiarize himself with the boiler feeding apparatus, tracing all pipes and connections from source of supply to discharge into boilers; learning how to operate auxiliary pumps or injectors, so that in an emergency he may be able to take charge of, and operate the pumps. He should also learn the parts of his plant which are the most liable to give trouble and require prompt action, using his judgment in the matter, picking up the details, listening patiently to profound explanations given him of trivial things that he knows all about, keeping in mind that some point may be gained from it all, that is worth knowing. Another important thing for an engineer to know is what tools there are in his department, where they are kept, and the ability of the men working under him to use them:—Engineers' and Power Magazine.

THE CARE OF OUR BOILER AND ENGINE.

(A Paper by E. Vanarsdel, Shelbyville, Ky., Read at the State Convention, Mammoth Cave, May, 1899.

It will not be possible for me to discuss this subject from a scientific standpoint or go into the theory of steam engineering, but I will confine myself to the practical side of the question; speaking more from the standpoint of one of that class of laundrymen whose engineer is also the washman, and oftentimes the fireman as well.

The steam boiler of laundries, and for that matter other steam plants, does not always receive the amount of care and attention to which it is entitled. So long as it will do duty without serious mishap we are likely to rest easy in the thought that it is all right, when expert examination may reveal cracked plates, broken stay bolts, excessive corrosion, and other defects that are entirely unsuspected.

One of the most important points in caring for the boiler is keeping it clean and free from scale. The evils resulting from accumulation of scale are many; making the boiler hard to steam, requiring excessive firing and increased consumption of coal, with the possibility of burned or blistered plates. It has been estimated that a coating of 1-16 inch of scale causes a loss of 13 per cent of fuel, $\frac{1}{4}$-inch 38 per cent, and $\frac{1}{2}$-inch 60 per cent. However, I believe this estimate is now considered excessive.

There are many compounds for the prevention and removal of scale; some are good while others are worthless, and in some cases have been found to be actually injurious. Almost every engineer has his pet scale preventative, among which may be mentioned the following: Tan bark, molasses, vinegar, soda ash, caustic soda, Irish potatoes and coal oil. The latter has many friends as a preventative, but as to removing scale already formed my experience with it was not entirely satisfactory; however, it located a couple of leaks I had not suspected. Regular and careful cleaning and frequent use of the blow-off is the most efficient method for preventing the formation of scale, yet with waters containing an excessive amount of lime or other solids some form of boiler compound may be an advantage.

The outside of the boiler also demands a good deal of attention, and should especially be kept free from dampness, as external corrosion frequently occurs from this cause. It may be on account of dripping from the safety valve, leakage from seams, or other causes which may go on for a long time unsuspected and finally damage the boiler to such an extent that extensive repairs will be necessary. Vertical boilers are particularly liable to corrosion, both inside of firebox where ashes are allowed to accumulate around the edge of the grates, and on the outside of the boiler at the base, where there is also likely to be more or less dirt and ashes, and if not kept clean it will not be a great while until you can drive a ten-penny nail through that part of the plate, as I remember seeing a boiler maker do on one occasion. This particular boiler was so badly corroded around the bottom it was thought best to cut away that part of the plate entirely, leaving the boiler six inches shorter. Leaks and defects of any kind should be attended to as soon as found, for the tendency is invariably to get worse and I don't know of a better application of that old adage, "A stitch in time saves nine," than when applied to the steam boiler.

Few of us consider the amount of steam lost through leaky valves and valve stems, and the extra fuel necessary to supply this waste would no doubt be surprising if we had the figures before us. The safety valve is often a source of trouble in this respect while on the other hand if it does not leak at all it is liable to stick and not go off at the proper time. It is a good plan to raise the lever frequently to make sure it will open when needed, as a safety valve can only be considered safe when of proper size, correctly loaded and well cared for.

It is generally understood that the majority of boiler explosions do not occur on account of low water, as the newspapers invariably state, but from over pressure. I do not think that we should understand by this that the gauge should indicate a dangerous pressure, but rather through careless handling, excessive contraction and expansion or other causes, the strength of the iron has deteriorated to such an extent the boiler will no longer stand the accustomed pressure and an explosion follows. There is a certain amount of satisfaction in knowing that your steam gauge is indicating the exact pressure, that the safety valve is of proper size and correctly loaded and no serious defects about the boiler.

Many times there are faults that the average fireman or engineer will not notice that can only be located by a competent boiler inspector. For this reason I consider boiler insurance a good investment not only for protection in the event of an explosion, but for the benefit derived from regular and careful inspection. While no amount of inspection will prevent carelessness, it may be the means of discovering the results of such carelessness before it is too late. Carelessness or negligence in the boiler room is entirely inexcusable, and should not be tolerated under any circumstances.

Regarding the care of an engine my experience has been confined wholly to the ordinary slide valve variety, and while they will usually do duty with less care and attention than the pattern with a more complicated valve gear, there is a sufficient opportunity for economical and careful handling. The appearance of an engine is a fair indication of the capabilities of the engineer. If kept free from grease and well polished, the bearings are apt to be nicely adjusted, properly oiled, and every part of the engine in good condition; while dirty, greasy looking engines always suggest a rattle and knock, and the rattle and knock is usually present.

When starting, slow and careful opening of the throttle adds much to quiet and easy running, and 'tis a little inconsistent to make a practice of opening the throttle suddenly and then abuse that particular engine because it is afflicted with a big healthy knock. Locating a knock, however, is not always an easy matter. The cross head and crank connections are the usual sources of trouble in this respect, but it may occur at other points that will defy the skill of any but an expert to discover the trouble.

To get the best and most economical results it is important that the valve be properly set. On the small sizes of slide valve engines little attention is paid to this matter. So long as the engine shows no tendency to run backward the valve is supposed to be all right, although it may be using more steam than would be necessary if the valve was properly adjusted.

Occasional examination of the cylinder is a good plan, as a scored cylinder and broken cylinder rings may run for a considerable length of time without being suspected.

I remember several instances of broken rings where the evidence showed they had been running that way for months with a consequent loss of steam and damage to cylinder.

Excessive leakage around piston and valve rods is not an evidence of careful management, and continued running in that condition will damage the rods to such an extent that the best packing on the market will not be sufficient to stop the leak.

An outfit of pipe tools is very necessary about the laundry, and will more than save their cost in the course of a year without considering the fact that repairs are apt to be more quickly attended to where everything needful is right on the spot.

At times there will arise difficulties in caring for the steam plant which will require the services of the boiler maker or machinist, but by careful and competent management this expense will be reduced to a minimum.

FUELS.

The principal fuels are mixtures of carbon and hydrogen and compounds of these elements, together with a few other substances the presence of which is generally to be regarded as incidental, as they are not the effective constituents, are frequently undesirable, and detract from the calorific value of the material.

Fuels occur in three forms, solid, liquid and gaseous, and may exist ready formed in nature or be artificially prepared. They may be of mineral, animal, or vegetable origin.

The principal solid fuels are wood, charcoal, coal and coke.

WOOD.

The woody structure of plants consist mainly of cellulose, the chemical composition of which is approximately represented by the empirical formula $C^6H^{10}O^5$. Along with the cellulose which forms the frame work of the cells there are always other products of plant life stored in the cells, such as water, resins, oils, gums, mineral constituents, etc.

When wood is burned the organic constituents are consumed and pass off as gaseous products, while the organic or mineral constituents remain behind as ash. The visible products of the combustion are smoke, consisting mainly of unconsumed particles of carbon, afterwards deposited as soot, and of partially condensed water vapor. Along with these are commingled various invisible gases, as uncondensed water vapor, carbon dioxide, etc. To vaporize these substances require a large amount of the heat set free from the combustion of the fuel. For this reason, and to get rid of the deposit of soot, it is sometimes advisable to drive off the volatile constituents as much as possible before using as fuel, and to use the wood in the form of charcoal.

COAL.

Coal, as is well known, is of vegetable origin, consisting of the carbonized tissues of plants which, becoming buried beneath layers of earth and water, have gradually parted with much of their volatile constituents, leaving the solid carbon behind in the form of a dense, black mass, mixed with a greater or less quantity of earthy impurities. Coal differs from charcoal in composition in that it contains much of the original hydrogen and other volatile constituents of the wood from which it was formed, while in charcoal these have been more or less completely driven off by the heat employed in the process of manufacture.

VARIETIES OF COAL.

For the purposes of the arts coals are divided into many varieties and sub-varieties, but for present purposes it is sufficient to distinguish only two classes, the soft or bituminous and the hard or anthracite coals.

The soft or bituminous coals cleave readily into cubical or prismatic blocks, burn with a bright flame, and produce much smoke and soot. They contain much volatile and tarry matters and are good steam producers.

Anthracite coals are much harder, break with a glassy, irregular fracture, having a shining surface and a somewhat bimetallic luster. They contain more solid carbon and less volatile matter than the bituminous coals, burn with a bluish flame, and produce little smoke or soot. They are difficult to kindle as compared with the bituminous coals, and yield an intense heat.

The average composition of bituminous and anthracite coals is exhibited in the following table:

	Ash. Per cent.	Fixed Carbon, Per cent.	Volatile, Carbon Per Ct.
Anthracite - - -	4 to 16	77 to 91	2 to 7.5
Bituminous - - -	1.5 to 5.5	57 to 66	28 to 32

Coals are valued commercially according to their steam-producing powers, measured by the quantity of water which each pound of coal will vaporize. Under the most perfect conditions a good grade of steam coal should evaporate fifteen times its own weight of water. Practically, however, the loss from imperfect combustion and other causes so reduces the amount that the actual results rarely exceed two-thirds of the theoretical.

COKE.

Coke bears the same relation to coal that charcoal does to wood, and is manufactured by essentially the same process. By an incomplete combustion conducted in circular, brick-lined chambers, called "coke ovens," and so arranged that the supply of air can be reduced at will, or entirely excluded, the more volatile portions are driven off, leaving the solid fixed carbon and mineral matters behind as coke.

The coals best adapted to the manufacture of coke are the bituminous varieties known as "caking coals" from their tendency to fuse and run together when heated. The escaping gases expand the fused mass, which thus acquires its porous or vesicular structure.

Coke is also obtained as a by-product in the manufacture of illuminating gas, by heating coal to a high temperature in closed retorts. The volatilizable constituents are driven over and collected and purified, leaving a residue of coke behind. In addition to the gaseous substances other products are coal tar, carbonic acid, benzol, aniline, etc., many of which are very valuable.

Coke and charcoal making are both processes of destructive distillation, except that when the solid products are the ones desired, the volatile ones are commonly permitted to run to waste. When the processes are conducted in closed retorts with provisions for collecting the volatile constituents, then the solid residues are the by-products.

Coke burns like charcoal with a bluish flame, does not deposit soot, yields an intense heat, and is a valuable fuel for many pharmaceutical purposes.—Pharm. Era.

SMOKELESS ARTIFICIAL FUEL.

A gentleman living in San Francisco, California, is said to have made a valuable discovery, that will prove advantageous to laundrymen. It is the making of an artificial fuel, it burning freely, and practically without smoke. It will not break either while handling or while burning.

To accomplish this, for each ton of coal dust, culm or coal screenings, there is added of slack lime about eighty pounds; of gelatine, dissolved, what would be equivalent of from six to ten pounds in a dry state; and of bichromate of potash about one pound dissolved in from one to three gallons of water, according to the amount of water the coal may hold due to exposure to the elements. In preparing these separate ingredients, the stone lime is first reduced by sprinkling just enough hot water over it to bring it to a fine powder, then dissolve in a separate vessel from six to ten pounds of gelatine, care being taken that its adhesive powers be not destroyed by the employment of too much water. The bichromate of potash is placed in another vessel and dissolved with the necessary quantity of hot water, the proportion being about one pound of the bichromate of potash to from one to three gallons of water, the quantity of water being varied, as above stated, according to the moisture in the coal dust, as the quantity and strength of the solution must correspond to the quantity of gelatine present in the ton of coal. The mixture is preferably to be pressed into form, as it moulds.

The lime is to prevent the formation of clinker, for as the fuel burns, it combines with any silex or silicious matter present in the coal. Where the coal is free from clinker-forming impurities, the lime may be omitted. The bichromate of potash and gelatine are to produce chromatized gelatine presenting a binder insoluble in water and affording some oxygen to the coal in burning, causing free burning, without smoke, both from the fact of the supply of oxygen to the gelatine from the oxidizing agent and from the fact that a small percentage of the bichromate will be left as such. Instead of bichromate of potash, chromealum may be employed as an equivalent.

In making this mixture the lime is first added to the coal dust, and after a thorough incorporation the gelatine solution is added, and lastly, the bichromate solution; and if it is desired to at once bring about the chemical action between the gelatine and bichromate, the mixed mass should be brought to about 150 degrees F., more or less; but if the mixture, as in briquets, is to be stored for a short time, or is to be transported some distance, the admixture may be performed while the mass is in a cold state, as the chemical change will take place between the gelatine and the bichromate in two or three days. The mixture will answer for any kind of coal dust, either anthracite, bituminous, or lignite, the bituminous and lignite series requiring an increased percentage of the chromatized gelatine to render it smokeless, as will be readily determined by experiment. The chromatized gelatine forms an admirable binder and one that is insoluble in water, and will hold the particles of the coal tenaciously together under all conditions, either while being handled or transported, or while being burned.—Exchange.

WATER TO BURN.

WHEN THE COAL SUPPLY IS EXHAUSTED WATER MAY BE UTILIZED.

A scientist who is prominently connected with one of the scientific institutions of the government, in discussing the source of fuel supply in the future, said:

"It is as clear to me as anything in the future can be, that it will not be very long before the stock of coal in this country will run out.

"What will supply heat and motive power? Where will our heat come from? Electricity, I know, is depended upon, but it requires coal, and a lot of it, to generate electricity. Our water powers, of course, can be relied upon to do a great deal in that direction, and there does not seem to be any limit to the distance that electric power and heat can be carried, as is instanced by the wonderfully successful experiments at Niagara and other places, where waterfalls are being harnessed.

There is a theory that at some time the electric currents in the air can be brought down to the earth and utilized as fuel and motive power, though the experiments in that direction have not been as successful as could be desired. But granting that electricity will prove all that is expected of it, I am convinced that it will all be needed and even more. Where is the addition to come from? It is nonsensical to go into any such calculations, but I am firmly convinced that those who are to follow us will have to fall back on water.

"We have plenty of water, and after we have used it for all other purposes, will have "water to burn." Of course, the difficulty will be to get means to burn it. That it can be burned has been demonstrated. The component parts of water, hydrogen and oxygen, furnish plenty of fuel when they are separated, or are found in the proportions desired. Could we decompose water and get the hydrogen and oxygen in the shape we need them there would be no trouble, and the gradual disappearing of coal mines would not be the source of alarm that it now is.

"There have been a number of stoves made to burn water as a fuel, and in a small way some have done so. After building a fire of coal in the ordinary way, if it could be arranged that a certain quantity of water could be conducted to it (that is, on the bed of the coals), a fire could be kept forever, making the ordinary calculations for the burning out of the stoves and other parts of the apparatus, which has to be done with coal or wood fires. One drop more than the certain quantity needed, however, will put out the fire.

"Science and invention will eventually solve this matter, and it may be inside of the next fifty years, that we will be burning water as fuel to run our electric engines, which, in turn, will run everything else."—Washington Star.

SMOKE CONSUMPTION.

There is a standing proof that smoke can be successfully abated, and that the result is not only cleanly, but economical.

The Garlock-Frazee Laundry Company, of Cleveland, Ohio, consumes its smoke and saves money by doing so.

A reporter visited the laundry, and was shown the boiler room by Mr. W. H. Garlock. The boilers are two in number. In front of them is a bin, in which the coal used, a very cheap grade of slack, is kept. In front of the boilers are large iron receptacles for the coal.

All the fireman has to do is to keep these receptacles filled with coal, from the places where it is first put. The engine operates the bars of the grate, which slowly move back and forth against each other as the coal passes down between them. This motion sifts and cokes the coal, so that when it reaches the fire-bed it no longer is of a composition to create dense black smoke when it burns.

From the high stack in the rear of the laundry a very thin smoke, almost imperceptible to the naked eye, issues. This smoke is just the color of a white summer cloud, but there is so little of it that it looks even whiter.

In order to illustrate the difference between ordinary smoke and that created when a smoke preventing device is used, Mr. Garlock instructed the fireman to open a side door in one of the furnaces and throw on a shovelful of coal. This was done and immediately afterward a cloud of black, dense smoke issued from the stack and befouled the air. This continued for fully two minutes.

Mr. Garlock said when he had his laundry on Sheriff street it was a much smaller affair than now, yet the coal bills at present are from $40 to $50 less a month than they were at that time.

ELECTRIC POWER IN LAUNDRIES.

A GENERAL SETTING FORTH OF THE PRINCIPLES GOVERNING THE USE OF ELECTRICITY FOR VARIOUS PURPOSES.

The advisability of employing electricity as a source of power in laundries, and the comparative cost of same, is a difficult matter to handle in all its bearings for the reason that local conditions ultimately determine the relative cost and efficiency and economy of all kinds of power. What one laundryman pays at one place may be either a half of or twice as much as another one pays for the same service. Every case must be decided upon its own merits, as various elements enter into the questions involved.

In transmitting electric power in large amounts to large establishments, the best standard of comparison is with modern steam plants, which in cases under the observation of the writer produce a horse-power for from $15 to $20 per year of 310 working days, of ten hours each, this cost including the pro rata of fuel, oil, waste, labor, taxes, interest on cost at 5 per cent., and allowance for depreciation of plant 5 per cent., with fuel of second grade bought in car-loads at $3 per ton. At $4 per ton the cost will be increased to from $17 to $24 per horse-power per year of 310 working days of ten hours each. In the coal and coke regions of Pennsylvania, West Virginia and elsewhere, the cost of fuel is less, and consequently the cost of power is less.

Competition governs the rates asked for electrical service as it does other ratios in business; and it is entirely safe to say that, taking an average throughout the country, electric power can be had by permanent takers, either from the public companies or from other private individuals, for $25 per horse-power per year, and thus bring the cost of electricity very close to the cost of average operation by steam. In comparison with such a rate as this, the installation of a special plant, either by water power or other means, would hardly seem to be justified on account of high initial cost, and inevitable losses in conversion and transmission. It would not be advisable with plants of small and moderate size.

ECONOMY OF ELECTRICITY OVER STEAM POWER.

It is a well known fact that all machinery-using establishments exhibit a wide variance in the amounts of power used and necessary at different times. All of the machines in a laundry may be running at one time, or only a few machines may be running, and those only on comparatively light work. Thus the power required in the same establishment varies as the work varies, yet the power supply must at all times be able to furnish, on call, the amount of energy required when all of the machinery is running heavily.

Suppose, then, that a certain laundry is equipped with such machinery that when all are being operated one hundred horse-power is needed, and that for half of the time on an average only about fifty horse-power is needed. If you are a steam user fifty horse-power is wasted about fifty per cent of the time, for your engine must be a one hundred horse-power engine, and while keeping always under way run at half waste a fair proportion of the time. This condition of variableness has been a great handicap to the universal employment of steam at this day and age, and has made an opening for a power capable of higher average economy. This is reached through scientific application of electricity.

FURTHER ECONOMY OF THE STORAGE BATTERY.

The latest electric development, with a view to furnishing power economically, is the storage battery; and there is no reason why its advantages may not be utilized in laundries as well as in other power plants. It can be used in connection with plants driven from a leased or purchased current, or with those in which the current is home-generated. In the first mentioned system the current would come, as has already been intimated, from some electric supply station, and would drive electric motors placed at different points in the establishment. This current, instead of driving the motors direct, however, passes through a storage battery. This battery is large or small, in accordance with the extent of the plant.

Suppose, for sake of illustration, that the average "load" on the power is fifty horse-power, and that it occasionally run up to one hundred, and sometimes again drops to almost nothing. At all events the power is used only during the working hours, say ten, there being no "load" on the power for the other fourteen.

Were the current used direct, it would have to be sufficient to furnish one hundred horse-power at all times, day and night, and as an electric current would be, under our original supposition, purchased by the year, it would be wasted for more than half of the time. But in arranging for it provision would have to be made for the maximum possibly to be wanted.

By using the storage battery, even though the laundry was occasionally run for twenty-four hours daily, the current required would have to be sufficient only to furnish the average power of fifty horse-power. When the machines were running lightly, and only part of them at a time, the superfluous energy would discharge itself into the storage battery, charging that. Then, when more machines were put into operation, and the power required temporarily ran up beyond the average of fifty horse-power, the storage battery would begin to discharge, thus supplementing the current, and allowing the constant fifty horse-power continuous supply to drive during certain periods machinery requiring one hundred horse-power for full speed and highest efficiency.

The fact of the machinery running less than half of the time makes the reduction in the amount of original power required perhaps still less. During the night the entire current will discharge into the battery, charging the latter to a point which will allow it to carry, in case of necessity, almost all of the entire load during the working hours. The current needed and paid for would thus be very much less than that needed to run the motors and machinery direct; and far more than enough to pay for the installation of the storage batteries.

THE INDEPENDENT SYSTEM.

Then there is the independent system of running engines and dynamos, and generating electric currents which drive the motors required in the operation of the plant. As has before been said, this is practicable and economical only in a few cases, but it is included in our observations for the purpose of making them comprehensive and applicable to the whole of the trade.

Even in such a power system as the one just outlined, where steam is employed to drive an electric generating apparatus, the storage battery is useful in the same manner. Instead of driving direct from a one hundred horse-power steam engine, a certain size dynamo is operated by, say a fifty horse-power engine, and the electric current thus generated used to drive the motors in the laundry through the medium of the storage battery. In this case the size of the engine is, by the intervention of the storage battery, reduced one-half, and its fuel consumption decreased by a large ratio. As a result, the original cost of the engine is greatly reduced, and the constant charges for fuel decreased, which profits are offset only by the cost of the storage batteries. The original power unit necessary is thus made much less than with the direct system, and the "load" on the current kept much more constant.

In short, whether the electric current be generated in the laundry or purchased from a supply station, the storage battery offers the additional advantage of being not only a money saving auxiliary, but of being able to take for a short time, in case of necessity or desirability, the place of all kinds of power. This advantage is highly apparent in case of accident or other cause which renders the engine, dynamo or supply current from whatever source useless. Under present methods of repair and replacement it will usually happen that before the storage battery is exhausted, the accident or other disastrous happening has been put in good condition again, and the work may go on without interruption, saving perhaps the cost of a system of storage batteries in two days' time.

A late demonstration of the utility of the storage battery, and the economy derived from its use, is an application to an office building in the down-town district of New York city. A twenty-five horse-power steam engine, supplied with steam from a street service pipe, drives a twenty kilowatt dynamo. The exhaust steam from the engine passes through an exhaust pipe properly connected to the heating system of the building. The dynamo is run in connection with a storage battery comprising 118 cells, each containing four positive and five negative plates, 10½ inches square. This dynamo storage battery system operates two Sprague high-speed elevators, on which, of course, the load is exceedingly varying, and supplies five hundred sixteen candle-power incandescent lamps, as well as several pumps and a larger number of ventilating motors.

The cost of the steam used in the operation of this plant is under $1,200 per year; and when it is taken into consideration that this amount heats, lights and operates the elevators of a thirteen-story building, and that is fully $500 per year less than the expense of operating any other system of equal extent, the commercial and mechanical value and economy of the storage battery is apparent.

The storage battery, in connection with an electric power system, will yield the same results in a laundry as in a street railway or office building plant. In the latter two, as well as in other power plants where it has been tried and is in successful and satisfactory operation, it has without exception made great savings in the expense of furnishing heat, light and power. These examples are sufficient to warrant its adoption in laundries, the owners of which desire to save money.

The one point urged against the secondary battery is its expense at the time of installation. By those who wish to increase the capacity of their power plant, and who consider the advisability of installing a storage battery system, it is often urged that the cost of the battery is such that it will be cheaper to put in even another and larger engine, or by other means enlarge the original power supply. However, the cost is such that the great economy of use enables the storage battery to more than pay for its cost of installation. The convenience in a laundry of an electric power which is not only economical, but the waste of the power from extensive systems of transmission is entirely obviated, and each piece of machinery is driven only when needed; and when not needed the power otherwise necessary to operate it is saved outright.

ASSISTANT MANAGER.

ESSAY—SANITATION.

(Paper read by C. A. Royce, Cincinnati Convention L. N. A., Sept., 1898.)

Mr. President and Gentlemen of the Convention: One who would discuss the important question of sanitation, as applied to our particular line of industry, should be something of a scientist. I am unable to so classify myself; therefore in any comments I make it is quite likely I may wander far astray in both my premises and my conclusions. Kindly keep my object in view, which is simply to bring to your attention a matter of prime importance; comment upon the same—wisely or unwisely, to the end that the subject matter be discussed, so that I, with you, may gather something of knowledge from the storehouse of wisdom so often on tap at our conventions.

It is within comparatively recent times only, that our subject has become one of popular interest. This change has came about through the spread of what is commonly called the germ theory of disease. It is an established fact that nearly every disease—perhaps every one—with which man is afflicted, has its specific germ. These germs are disseminated through the air we breathe and through our food and drink, so that we are constantly subject to contagion.

The germ theory solves many puzzling questions; contagion and infection have always been recognized, but just how contagion and infection took place was not fully understood; the discovery of the germ solves the mystery, so that now all we have to do is either to render ourselves immune or to get rid of the germ.

Typhoid fever is contracted through the use of infected water or milk; diphtheria is taken into the system through the breath; consumption is a germ disease; the consumptive expectorates on the street, the sputa becomes dry and the gentle wind serves to load the air with germ laden dust; diseases are contracted through contact with the person or clothing of diseased persons; finally, the best friend of disease is filth or unsanitary conditions, and its worst enemy is cleanliness or sanitary conditions.

These considerations lead us up to the question: Are laundries a public menace through likelihood to spread contagion—as is sometimes claimed—or are they not?

The laundry instead of being a disseminator of disease is exactly the reverse. I shall hope to make this clear as I proceed.

It is urged in some quarters that the laundry may spread disease through its water supply. Water is perfectly neutral; it readily takes on the properties of other substances; it dissolves more or less effectively almost every substance with which it comes in contact, it is, therefore, readily contaminated; in fact it may be stated, that absolutely pure water does not exist upon the face of the earth unless it be in the laboratory. It is quite reasonable to suppose that the use of contaminated water in the laundry under certain conditions might be a source of danger.

Another danger that is sometimes supposed to lurk about the laundry is vitiated air. Whether or not vitiated air affords an especially favorable atmosphere for the propagation of disease germs, I am unable to say, but we know that persons obliged to breathe such air constantly lose in vitality. In other words they lose the power to resist the attack of germs which, as we have seen, are always about, ready to do their natural work. In this way contagion may begin in the laundry and spread in the usual way.

Another danger is uncleanliness. I am quite prepared to accept the doctrine that the filthy laundry is a public nuisance and should be abated.

Another supposed danger comes from improper and insufficient plumbing arrangements, including closets, traps, drainage, etc.

The foregoing specifications will perhaps complete the list or rather sum up the argument; of those who are disposed to treat the laundry as a menace to the general health. Let us now see what may be said upon the other side.

Our health authorities are supposed to trace the source of epidemic disease, and it is gratifying to know that efforts in this direction are usually successful. I have personally known of several epidemics where the trouble has been traced to its source and I have never known of a failure. In so far as I know of personal knowledge, and in so far as my reading goes, I do not know of a single instance where the source of disease has been found in the American laundry. I am aware that this is a purely negative argument but to my mind it is a very strong one, certainly the innocence of the laundry must be admitted until proof of guilt is forthcoming and such proof is as yet entirely lacking. We have, however, other than negative arguments.

The laundry process is essentially germicidal. If we ask the sanitary expert to name the most effective germicide known, he will at once reply "steam"; in other words heat. No known disease germ will long survive a temperature of 212 degrees. Admitting that diseased clothing does sometimes escape the vigilance of health boards and find its way to the laundry—and this is not so common an occurrence as some suppose—it is speedily subjected to the laundry germicidal process and the germs are destroyed. This fact in itself is sufficient to prove the laundry sanitary, but we will go a step farther. If the water argument is introduced, we will reply, the laundries for the most part use for washing the same water their patrons drink; if the water may be drunk with impunity, why should it not be a healthful washing fluid? Furthermore, the same matter of heat applies here in large measure, as comparatively little cold water is used. Then again our drying and our ironing have exactly the same germicidal effect as the washing.

If the bad air argument is used, we have but to invite the timid soul to visit our modern laundries and note the elaborate means used to supply to the workers a constant and full supply of pure air.

Should one speak of filth, we have but to show that the filthy laundry is a rara avis.

Our final argument is the health of our workers. It may be stated without the fear of successful contradiction, that in no indoor employment [illegible] general health better than among laundry workers.

I have purposely refrained from discussing the matter of plumbing for the reason that factory laws and ordinances are now well nigh universal and cover this point fully.

Having shown, I hope, with some degree of clearness and certainty, that the laundry is not and cannot be a menace to the public, I am yet of the impression that perfection along sanitary lines, has not been reached. There is room for improvement, and without feeling at all competent to show just how, and along what lines improvement should come, I shall attempt a few suggestions for your consideration.

It is obvious that all goods coming to the laundry are not, in the washing process, subjected to a sufficiently high degree of heat to satisfy sanitary requirements; this is especially true of underwear—which is perhaps in more need of such treatment than any other wear—and of such goods as are dyed with delicate colors. If these goods should happen to be septic, we are dependent entirely upon our drying and ironing processes to supply the remedy. The question then arises, whether or not it would not be wise for laundries to supply apparatus by which all clothing coming to the laundry should be subjected to steaming as the first operation. It is evident that such apparatus could be provided without great expense, and with no considerable addition to cost of production.

The matter of laundry construction opens up a large and important field for consideration and one I do not feel at all competent to enter upon. It should be made an object for architects and builders to study the needs of the modern laundry to the end that when one starts out to construct a laundry building he may go to an architect with some degree of certainty that in the end he will have a building perfectly adapted to his needs, this adaptation applying not only to general form, but to materials as well, and with the sanitary requirements fully provided for.

The President: What is the pleasure of the convention in reference to the paper just read?

Mr. Jones: I would like to ask members if underwear can be sufficiently steamed to kill microbes without shrinking.

Mr. Castaing: Being interested in the manufacture of antiseptic surgical dressings, I have made a special study of the subject of microbes and bacilli. Some of them are killed at a temperature below boiling point, and some others at a temperature ranging from 212 degrees to 236 degrees Fahrenheit; the hardest of them to kill are the anthrax and tetanus bacilli. I do not think there is any underwear that would stand that temperature without shrinking. Recent investigation has proved that the best germicide is a fifty per cent solution of soap. Superheated (dry) steam has failed to kill microbes, whereas moist steam destroys them at a lower temperature; therefore, I say, if you are in doubt about the condition of the underwear, all you have to do is to soap it.

Mr. Beck, of Atlanta: Last winter we had a partial epidemic of smallpox in our city among the colored people, and to fortify myself in my business, not knowing but that possibly we might have a case occur during the run of the disease, I consulted an eminent specialist in Atlanta, who had been in the government employ the year before, having charge of a sanitary department, with reference to killing germs of yellow fever. The Doctor, after going through the laundry and seeing the different processes, assured me that we returned our clothes to the people thoroughly free from anything of the sort. Mr. Castaing has been modest with reference to his business, but this doctor told me that the chemical bleaches used in the laundry are almost a perfect germicide.

SANITATION IN LAUNDRIES.

DISINFECTANTS ONLY USEFUL TO PREVENT THE SPREAD OF DISEASED AIR OR MATTER.

(Written expressly for the National Laundry Journal.)

The laundry proprietor who is looking for the best results from the mechanical equipment and help he has, will be benefited by paying careful attention to the sanitary requirements of his establishment. Health and comfort mean a higher standard of work all around, and more of it.

Although these things are not wholly within the direction and control of a proprietor, especially if he be only a tenant, still he may keep an eye open to the conditions among which his people work, and strive to make them both favorable and comfortable. The dangers, when such exist, usually proceed from causes unconnected with the laundry business itself, generally in connection with its location, management or sewerage.

The essentials of healthful employment are pure air, pure soil and surroundings, and pure water. If your laundry occupies a place in a dry, well-ventilated building, on a well-drained street or avenue, on a favorable site, and the water used for all purposes is free from contamination, both you and your people should escape most of the ills that less well-protected flesh is heir to. Without these essentials you and your associates are in a state which might be called "extra hazardous."

Col. Waring, whose efficient work has revolutionized the sanitary conditions of New York City, has issued a formula embracing two broad injunctions: First, to allow no organic decomposition within the building, or to find its way into the drains under unhealthful conditions. Second, to allow no drain air to enter the establishment under any circumstances. To these we might add the following: "Drain, purify and ventilate."

If possible eradicate every hint of dampness from the foundations. Do not store up anything capable of decomposition, or of creating offense. When lunches are brought to the laundry, let the remains be taken care of the same day, placing them in the garbage barrel, or some other especially appropriate receptacle which is emptied with regularity. Let the hidden things be revealed, and the sunlight and air enter everywhere possible.

Do not cleanse the belongings of others, with regard for every nicety, and then neglect the sanitation of your own establishment. Use plenty of soap and elbow grease. Let the broom and the scrubbing brush be the scepters of supremacy. Inspect constantly, take nothing for granted, and remember that eternal vigilance is the price of comfort and health, in any line of life.

All plumbing pipes should be in plain view and readily accessible. They should be exposed to light and air, both for the sake of ventilation, and in order that defects may be quickly seen and removed. Where it is thought best to hide the pipes, however, it is preferable to carry all sewer pipes in recesses in the walls, which should be made sufficiently large for convenient caulking of the joints. The recesses should be closed at the cellar or basement ceiling, so as to thoroughly exclude any odors from that source. Col. Waring also advises closing them at each floor as an additional precaution.

Wherever animal matter is conveyed in pipes, or stored up in combination with heat and moisture, "sewer gas" will be produced. The danger from these gases is not from their potency for evil alone, though putrescent sewerage may cause considerable ill results, but from the germs of contagious disease which they may convey. The light, and almost infinitesimal disease germs which are borne in its foul current through drain connections into houses and workshops, are now believed to be the prime factors in conveying contagion. Even animals recognize the presence of sewer contamination. When the overflow of a watering-trough is immediately connected with a sewer, horses will refuse to drink the water although it may be apparently clean. When the sewer connection is cut off, however, they will make no further objection.

Every tight cesspool, many of which are connected with laundries in the smaller cities and towns, acts as a gasometer for creating foul odors. Whenever its contents are stirred or agitated, obnoxious gases are evolved, and when any quantity of water is discharged into the cesspool an equal quantity of foul air must escape through what is, in some cases, the only opening, back into the laundry.

The ordinary trap is a bent pipe, in the form of the letter "S," to act as a water seal for excluding gases. Too many of the patented devices on the market may be defined as traps to catch customers rather than to keep out sewer smells. A ventilated "S" or "P" trap will serve all practical purposes. There is a common impression, also, that sewer gases will penetrate through the water seal of traps, but this is a mistake, and such a barrier can be trusted as an effectual safeguard against infection from drain air.

It is a common practice to ventilate waste and sewer pipes by connecting them into chimney flues, and few people recognize how very objectionable the practice is. The sewer pipe is commonly slanted across into the chimney flue, so that the end is liable to choke with soot, and also hinders the draft into the fire below. In cases, especially with ordinary chimney flues, in which the draft for at least half of the year is usually downward, there is a constant liability for the foul sewer gases to be drawn through any opening into the working rooms.

If any connection is to be made with the chimney flue, the sewer pipe should be carried to the top of the flue, and if possible, several feet above that, in order to secure a good draft. A better way is to have a special flue constructed in the chimney next to the flue from the heating apparatus, but not connected with it, and to carry all sewerage through its special flue. The warmth of the neighboring flue (through which the smoke and heat escapes) will assist an upward draft in the air currents from the sewer flue, without the risks which have been referred to.

When water tanks are used in the laundry, it is desirable to cover them so as to exclude dust and foul air. Very odd causes have produced stoppages in the outlet of tanks. In one case a mouse, probably in the attempt to leap over the tank, fell into the water and was found in the waste pipe. In another case, a workman carelessly threw a piece of tough meat, a remnant of his lunch, into the tank, and the action of the water forced it down the supply tube, so that it was extracted only with great trouble. The overflow pipes from water tanks are a source of constant annoyance. It is not uncommon to run them into the sewer pipe, and thus they become a direct channel for poisoning the water in the tanks with sewer air. Under no circumstances should the water tank, or its pipes, be connected with the drain of the laundry.

The popular idea that foul drains or plumbing fixtures can be made sweet and wholesome by pouring disinfectants into them has been exploded. Disinfectants should never be used as a substitute for cleanliness and ventilation. Disinfectants are only revived substitutes for fresh air. They may do very well for occasional use where the plumbing is known to be sound, but where there are leaks or other defects, it is just as well not to neutralize the offensive odors which are nature's danger signals to produce proper precautions. Again, some disinfectants, particularly carbolic acid, corrode lead pipes and traps, and are, therefore, to be used with extreme moderation.

Hiding a dangerous smell under a powerful odor will not destroy the germs of disease any more than wearing an overcoat will prevent a smallpox patient from infecting those who came in contact with him. Disinfectants are useful only for preventing the spread of diseased air or matter; but for counteracting the effects of sewer gas they are useless. The use of these modern abominations, which pretend to kill the germs of disease, patent disinfecting machines, water-closet purifiers, and so forth, is pernicious, and sometimes even dangerous. The laundryman who depends wholly upon them virtually confesses that his establishment is unclean, and that the bad odors need to be hidden or perfumed.

MANAGER'S ASSISTANT.

SOAP AS A DISINFECTANT.

Dr. Reithoffer has recently published the results of some experiments carried out by him with various kinds of soap, to determine their value as microbicides. He used the ordinary mottled soap, white almond soap perfumed with nitro-benzine, and hard potash soap. He found that these soaps were very inimical to the cholera microbe, 1 per cent solution killing them in a short space of time while a 5 per cent solution of the potash soap kills them in five minutes. We are, therefore,, at liberty to infer that, as in washing the hands the strength of the soap solution is never less than 5, and may go as high as 45 per cent, this method of disinfecting the hands, as well as the clothes, etc., is fairly trustworthy. Much stronger solutions are required, however, to destroy the bacilli of typhoid, the coli-bacillus, etc., not less than 10 per cent being sufficient. None of the soaps experimented with appeared to have any effect on the pyogenic microbe. The practical result of these investigations is that it is always preferable to use soap and water first of all, rinsing the hands in the disinfectant solution afterward. This is an important point which merits to be generally made known.—Medical Press.

DOCTOR'S OPINIONS.

Washing day is really a healthy institution after all, and the drying of clothes indoors the best way of disinfecting the house. So the London Lancet says. If you want to bring ozone into the house, hang out your sheets in the garden till half dry, in a keen wind, and then hang them up in your room, the air of which will then speedily become charged with ozone, so much that you may smell it.

Nobody knows why, it seems; but that such is the case many a housewife will bear witness.

VENTILATION IN LAUNDRIES.

A PROBLEM BEST SOLVED AT THE TIME OF BUILDING—PRACTICAL FACTS AND FIGURES.

(Written expressly for the National Laundry Journal.)

Of two laundry employees, all other things being equal, the healthier is most contented and comfortable. A great bane and drawback to securing healthful and comfortable laundries is the fact that, although the manager's ideas may be correct and his intentions the best, he is ordinarily handicapped by the structural shortcomings of the building in which he is established.

To be correct from the sanitary and ventilating points of view, diligent attention must be given to the details, from the ground up, in the following special particulars: Ventilating and heating; lighting (by daylight or artificial light); water supply; sewering and waste appliances.

It should be calculated that each person should have at least twenty-five square feet of floor area and at least four hundred cubic feet of room space for comfortable ventilation. The fresh volume of air required per man per hour is not less than one thousand cubic feet, even in cold weather, and much more is of course required in hot weather. This minimum ventilation for cold weather would have to be increased in warm weather principally by secondary means, such as opening of windows, doors, etc.

For the purpose of being independent of the wind, all upward vent shafts should be well raised above the roofs, and be bridged over and protected from rain, sleet and snow, either by louvres on all sides, a flat top with side openings, or a circular double cone outlet. Each of the three forms mentioned allows the wind to blow through without materially affecting the natural draft.

The one important rule as to the outlet ventilators is to have only one for each room, unless for rooms of great size, because if there are two or more outlets some of them will at times reverse the intended current. The size of the outlet will depend, naturally, upon the area of the room. No specific rule can be given for the size of outlet ventilators, but it may be stated that at least twelve square inches per person in the room should be provided, and in the hottest rooms, much more, the inlets being as near as possible of similar area.

Air inlets should be as numerous as circumstances permit, and arranged so as to disperse their drafts as widely and gently as possible. Of course, windows offer the readiest means of inlet, and they should have a number of small opening casements hung so as to turn their drafts upward, several small casements causing less apparent draft than one large one, by their small currents dispersing the air more readily.

For extensive top-lighted rooms, it is usually necessary to bring in the fresh air from the roof, so as to reach all parts of the room. This can best be done by air pipes hanging down a few feet below the roof, and with dispersing boards below them.

In dealing with a very broad room with other rooms over it, the equalization of the air can best be effected by having the air outlet at the center and the inlets around the sides, and some of these inlets may be brought down from the upper story; but as this plan tends at times to induce reversed currents, it is better when possible to bring in the air by large tubes below the floor from the nearest convenient open area.

Where there are raised louvres along the ridges of the roof, the best means of regulating the ventilation is by the openings just below the raised louvres. Such doors are cheaper than pivoted louvres. Doors are often made in two heights to aid ventilation, but a better plan is to have a second door hung just within the room, formed entirely of ventilating louvres, so as to turn the draft upward. A screen board may be hung over the lower part of the door when only moderate ventilation is required.

Having referred to outlets and inlets depending upon the temperature conditions of the room, or upon the outside atmosphere for their action, ventilation by artificial means is next in order for consideration. Heat applied in some suitable manner is the most constantly available power for artificial ventilation. Perhaps the best of all known means for inducing and regulating the ventilation of laundries are fans driven by power, which are easily applied and operated. One indicated horse-power, under favorable conditions, will drive 12,000 cubic feet of air per minute, or 720,000 cubic feet per hour, in and out of a laundry.

There is no longer any excuse for ill-ventilated establishments, for all the risk of backdraft, and the irregularities of wind ventilation, may be overcome by the power-driven fan, which will give as much or as little air as required by the simple regulation of its speed. The fan should be fitted to be central to the outlets, which should be one of the forms described, and preferably vertical. The speed of the fan may be regulated by stepped pulleys or by cone, pulleys and belting, or by curved cone friction pulleys, like a potter's wheel.

In selecting a ventilating fan, it should be remembered that the best forms have very large airways throughout, with little frictional surface, fine-cutting edges and well-curved vanes, so as to pass lightly a maximum volume of air. Although the outlets need not be so large for forced draft as those recommended for natural ventilation, it is well that the size of the outlets, shafts, etc., should be arranged for an air speed not exceeding six hundred lineal feet per minute. The corresponding inlets should, if possible and convenient, be arranged for a speed of about two hundred feet per minute, to avoid too strong drafts through small openings.

The writer strongly advocates ample light for laundries of all classes, and recommends either thick sheet or rough plate glass for daylight lighting. If gas is used, good burners are essential, alike on account of the better combustion and of the effect of poor light upon the sight of employees. Four-fold ventilation, for the same degree of health and comfort, should be calculated for while the gas is lighted. The electric glow light seems to be the best for all-round lighting purposes, when it can be thoroughly depended upon; but sometimes—especially in small towns where the local system is cheap and imperfect—it is too unsteady and unreliable for exclusive use.

Light and ventilation, without exposure to the weather, are, of course, needed for accomplishing the most work in the least time, and on the low ground of more money saving, and the high ground of duty, proprietors of laundries should be convinced of the economy of proper lighting, heating and ventilation.

ESSAY—VENTILATION.

(Paper read by Silas B. Waters, Convention of L. N. A., Cincinnati, September, 1898.)

I trust that the use of the pronoun "we," throughout this essay will be considerately overlooked, for this article in a sense is merely the description of a method of ventilation which we invented and constructed, to the end that we might have a comfortable place for our help to work in, as well as to furnish pure air to breathe, and in a very large measure, displace air surcharged with soot, dust, etc., and air that is rendered unhealthy by coming in contact with the heated machines, thus destroying its efficiency by neutralizing the health-giving oxygen.

In considering the ventilation of a large laundry, it was observed that the common error was of the displacing the air by the usual method of exhaust fans, thus simply creating a current from the outside of the building, bringing with it all the smoke, soot and dust contained in the air and not reducing the temperature to any noticeable extent.

It is well known, especially by those who conduct laundries in cities using bituminous coal, or any place where the air is saturated with the elements of dirt, that it is a problem of life to avoid these foreign particles coming in contact with either the fresh starched goods or those in the process of ironing.

We came to the conclusion that the correct scientific system would be to force the foul air out by the introduction of pure air, which at the same time could be artificially cooled.

In order to accomplish this result, an air filter was absolutely necessary, and after considerable correspondence with the leading concerns that made the system of ventilation a study, we found that such a project as we proposed was something that they did not seem to be able to cope with, nor to be disposed to undertake and guarantee to a certainty the results we demanded.

All their plans and specifications fell short of our idea of ventilation. All the others we could discover were built on the strainer principle, and, as it is a well known fact that the principle does not work successfully with water, we took it for granted that the same principle would be in error if applied to air.

We found that by indrawing the outer air, permeated with impurities, against a wet and irregular surface, they would first become moist and heavy and adhere to a spongeous bed, but by constant streams of clear, cool water, trickling through the bed, the particles must finally pass off with the water.

For a filter bed of the above described irregular surface, we use a vertical bed of gas coke eighteen inches thick, holding it in place by a wire netting. By a practical experiment we found that for every two square feet of coke we could get one square foot of air-passage way through the body of coke, which is of the size commonly known as nut.

. As it was first desired to have the air pass through this bed much more slowly than it would through the intake of the fan (which forces the air into the building) also to reduce the friction as much as possible, we made the filter bed twenty times the area of the fan intake, consequently reducing the velocity when passing through the filter bed to one-tenth.

This gives the air sufficient time to part with all the impurities, as well as to reduce the temperature to within ten degrees of the water temperature, which we use to supply the filter bed, and which in our particular case is sixty-two degrees. We find the resistance of the filter two-tenths of an inch water pressure.

The fan we use is a 120-inch frame, disc; 78 inches in diameter; 42 inches wide; inlet 54 inches in diameter; outlet 44x44; present speed 200 revolutions per minute. The outlet for each of our three floors is 26 inches in diameter as well as a 15-inch outlet in engine room.

At the time of starting our plant, some little apprehension was felt as to the amount of moisture the air thus filtered would absorb and the possible effect on starched and ironed goods. No sign, however, of any ill effect has been felt, the air issuing into the workroom feels cool and refreshing, not unlike the bracing air of Atlantic City. In fact, the effect on starched goods seems beneficial in a sense; the cool air absorbs the hot steam arising from the ironing machines and carries it out with the current.

I might state that we found it necessary to use well water, which is perfectly clear and cool, leaving no deposit on the bed. Since the introduction of this system we have not had a single case of heat prostration, although at times the out-door temperature was near the 100 mark. We have always considered that employees overcome with heat in a laundry was due to a lack of pure, fresh air, rather than the actual heat of the room. We might state also, that we are still in an experimental stage as to the distribution of air. It has been the lack of time during this busy season that has prevented us from completing our experiment. By increasing the supply fan to 400 revolutions per minute, instead of 200, it would enable us to have a slight pressure in the building, when all apertures were closed. At present we inject into our various floors 60,000 cubic feet of air per minute.

There is no doubt that the system is correct, although expensive, we feel that we shall be amply repaid for the outlay.

The President: Shall there be any discussion on the subject of Mr. Waters' essay?

Mr. Beck: I would like to ask—do you keep all openings closed?

Mr. Waters: We have not done so as yet. As I stated, we are not entirely through with our experiments. The air will have to be distributed in a little different manner from what we have it now. As it is now it comes in a volume in each floor, and whereas the effect is felt in the major part of the room there are little corners where it does not have the direct effect. We have not got it down to the system that we expect to have it when we get through. I might state that those members who remain over until Thursday we would be very glad to have come and see it.

* * * *

(Same subject—one year later—St. Louis Convention L. N., A. Oct., 1899.)

Mr. Barnes: There is a matter I would like to refer to here. Last year at Cincinnati our worthy president read an essay on ventilation, and many of us visited the laundry to look at it. I want to say that we adopted President Waters' suggestion at our laundry, and I take this opportunity to thank President Waters for the suggestion. In one very warm room, where we could not keep the people at work in the summer time, by the adoption of this method, when the temperature was 90 degrees in the shade outside, we were able to reduce the temperature to 75 degrees; this was our ironing-room, with all the machines in it. (Applause.)

Mr. Simmons: I want also to say that we have used Mr. Waters' system in our laundry, and we have had no sick girls to send home, nor have we had any girls go to the dressing room in a faint.

* * * *

The subject of ventilation in the laundry is intelligently and quite fully set forth in the Laundry Manual, pp. 93-96.

SHORT CHAPTER IN LAUNDRY ARCHITECTURE.

TO PREVENT DAMPNESS IN BRICK WALLS—FORETHOUGHT IN CONSTRUCTION TENDS TO UNIFORMITY IN TEMPERATURE IN SUMMER AND WINTER.

(Written expressly for the National Laundry Journal.)

The elimination of dampness from laundry walls constructed of brick may be accomplished, and a more uniform temperature obtained in all the rooms, by carefully enclosing a stratum of air in the walls. A space of about three inches should be left between the outside half brick and the inner wall.

Then cut wire about three-sixteenths of an inch in diameter (or not thicker than the joints in the wall are intended to be) into pieces about nine inches long; bend one inch of each end of these pieces to a right angle for ties to connect the walls across this space. Lay them over it about two feet apart, with their ends about half way across the bricks upon which they lie, so as to have them not over each other, but equally distributed along the space. To keep them from rusting, the pieces of wire heretofore described may be dipped in pitch or oil paint, in which case, protected as they are from the influence of the weather, they will last a long term of years.

Pieces of wire only three-sixteenths of an inch thick may appear to be a too slender tie where perfect security is desired, but it should be remembered that though a single hair is quite slender, a heavy horse may be pulled out of the mire by his mane; and in this case any required strength may be obtained by increasing the number of wires. By being placed as recommended, the wires would bind the wall better than is generally done by the usual method of binding without heading bricks. As recommended, the wires across the air-space will at any time be visible as soon as any opening is made sufficient to bring the space into view.

If the space is not over three inches wide, it may be closed at the top by a heading course, which, being sheltered from driving rains, snow and sleet, by means of the cornices and eaves, will not conduct any water into the inner wall. At the ends of the building it may extend to the tops of the joists, and the wall be dropped off the thickness of the space and there built solid, or, if desired, it may be continued to the rafters. At the door and window jambs, the band may be kept as usual, by clipping the headers; while at the chimney, the space may be stopped at the flues, and greater thickness of the chimneys will insulate them.

As atmospheric air is one of the very poorest conductors of temperature, this air space, when properly constructed, will prevent the wall from becoming suddenly either heated or chilled through by changes in the weather outside.

In a very cold climate it might be better to have strips of sheet iron, about three and one-half inches wide, laid along over the space at the top of each story, with one edge resting in the joint of the outer wall, or upon the wires as above stated, and the other edge leaning back against the inner wall, so as to be the highest on the inside —the partition walls to extend across the space and connect with the outer wall. This, by cutting off the communication, would prevent the air, as it acquired a more elevated temperature by the heat of the rooms in which fire is kept, from rising, and its place being supplied by the colder air from other parts of the building, to the chill and annoyance of workers. Then, by having duplicate sashes in the windows, with a stratum of air between them, the insulation would be, when desirable in extremely cold weather, complete and uniform.

To prevent possible injury to the wall, from the expansion of the enclosed air by summer heat, small openings should be left between the ends of the bricks, near the bottom of the space, about half an inch wide, or not large enough to admit rats.

In making plans for this type of construction, it is better to leave the space nearest the inside wall, in order that the thin part may be the less exposed. By superseding the old English or Flemish bond with the present methods in common use, the gain in symmetry is hardly commensurate with the loss in strength, and modern architects are too much inclined to sacrifice the latter to the former. Those, however, who seek and acquire a reputation for designing the most substantial and durable buildings should be preferred by all laundrymen erecting establishments for themselves.

ACCIDENTS IN LAUNDRIES.

When the increase in the number of laundries using power machinery, the remarkable increase in the number of machines available for use in the laundry business, and the increase in the number of employes, that has been made during the past five years, are taken into consideration, it is surprising that accidents to employes have not increased during that period to a greater extent.

Steam laundries have fully doubled in number during that time; and the number of machines in use has probably increased threefold, while it is safe to say that the number of employes has also probably doubled.

We have no definite guide as to comparison of the number of accidents, but from what information we have had, it would appear that the increase, if any, is but comparatively slight.

We give herewith a list of those which have been brought to our notice during the years 1898 and 1899. All accidents that occurred during that time, have undoubtedly not been brought to our notice, and while those that have are not sufficient to justify calling the industry a hazardous one to life or limb, they are enough to stimulate caution, prudence and care.

It will be noticed that few of these casualties were purely accidental. A casual glance over the nature of them, and consideration of their probable causes, will convince anyone that the majority are due to the lack of exercise of those qualifications. Some of those which occurred from being caught in belting could have been avoided by belting from below instead of above, and encasing the pulleys and belts with boxing or wire screen;

similar encasement of gearing would have avoided others; and proper feed guards in front of ironing rolls would have saved many fingers, hands, and perhaps arms.

The ordinary female dress, in clothing and their hair, invites accidents in employment around machinery; and those females so engaged should take all possible precaution to avoid flowing drapery, or loose hair.

Out of a total of 71 persons injured, 24, or more than 1-3 of the total, were injured by being caught in ironing machines, none of whom lost their life, however. Gasoline makes an active second in number of victims, showing eleven; but it leads in deaths, as four out of the eleven lost their lives.

Accidents in connection with wagons are third in number, showing seven, one losing his life.

Shafting stands in fourth place, with six victims. In two of these, women had their hair caught in overhead shafting; one of whom had her scalp torn from her head.

Lightning injured four of the 71, none of whom were seriously hurt.

Boiler explosions resulted in death to two, and injury to one, and miscellaneous causes contributed one victim each, to the number of sixteen.

ACCIDENTS, 1898.

DATE.	NAME.	OCCUPATION.	NAME OF LAUNDRY.	CITY AND STATE.		NATURE OF ACCIDENT.
Jan.	Ida Anderson	Employe	Superior	Superior,	Wis.	Hair caught in overhead shafting.
" 7	W. A. Patrick	Prop.	Mont. Stm.	Montgomery,	Ala.	Killed. Thrown from a buggy.
Mar. 5	D. Malley	Driver	Banner L. Co.	Pittsburg,	Pa.	Railroad train ran into wagon.
" 17	Bertha Gorgensen	Employe	Troy	Duluth,	Minn.	Hand caught in collar ironer.
" 14	Hilla Torkilsen	Employe	Empire	Chicago,	Ill.	Hand caught in rollers of collar machine, and died under the influence of chloroform.
May	Frank Dawson	....	Star	Alliance,	O.	Fell from top of steam boiler.
"	Andrew Mera	Employe	Cadet Ldy.	Westpoint,	N. Y.	Head injured by falling shafting.
" 9	Geo. Baker	Engineer	Peerless	Toledo,	O.	Hand pierced with stem of oil-can.
"	Jno. M. Larose	Foreman	Amer. Stm.	Fairmount,	W. Va.	Hand caught between rollers of collar machine.
"	Herman Bartell	Prop.	Star Ldy.	Danville,	Ill.	Injured by explosion of gasoline-tank.
"	Percy Ryan	Employe	" "	"	"	Ditto.
July	Daisy Johnson	Employe	Contra Costa	Oakland,	Cal.	Hand caught in mangle, arm amputated above elbow.
"	Luttie James	Employe	....	Pomona,	Cal.	Hand caught in ironing machine, fingers severely burned.
"	August Buse	Prop.	Parisian	Racine,	Wis.	Capsized from wagon, badly cut and bruised.
" 16	Fred Young	Driver	Home Stm.	Denver,	Colo.	Head and knees bruised in a runaway.
" 18	Geo. Savory	Prop.	....	Minneap'lis,	Minn.	Shoulder-blade fractured in a runaway.
"	Mary Erickson	Employe	....	Baraboo,	Wis.	Two fingers smashed in mangle.
Aug. 2	Mrs. Geo. Hale	....	....	Morenci,	Mich.	Burned to death from gasoline explosion.
"	....	Employe	....	"	"	Burned same time, died next day.
Sept. 27	Jno. Shelton	Employe	Enterprise	Augusta,	Ga.	Arm severely injured in rollers of ironing machine.
Nov. 30	Jas. Flinn	Employe	....	Titusville,	Pa.	Arm severely injured in rollers of ironing machine.
Dec. 3	Clara Potthoff	Employe	....	St. Louis,	Mo.	Hand injured between rollers of machine.
" 30	Geo. Quimby	Prop.	Ellis Ldy.	Menominee,	Mich.	Hand crushed between rollers of the mangle.

ACCIDENTS, 1899.

DATE.	NAME.	OCCUPATION.	NAME OF LAUNDRY.	CITY AND STATE.	NATURE OF ACCIDENT.
Jan. 5	Lizzie King	Employe	Riverside	Gardiner, Me.	Hand and arm badly crushed in mangle.
" 15	R. E. O'Manney	Inmate	Orph. Asyl.	San Rafael, Cal.	Arm caught in mangle, arm amputated.
"	J. C. Anthony	Prop.	Anthony Ly.	Marion, O.	Overcome by chlorine gas.
" 15	Laura Kuhn	Employe	Excelsior	Cincinnati, O.	Hand and arm mangled.
" 15	Pierre Bareilles	Vice-Pres.	Alam'da Stm.	Alameda, Cal,	Head injured by piece of ladder. Smoke-stack fell on ladder.
" 18	Wm. Stanfield	Employe	Ins. Asyl.	Louisville, Ky.	Severely injured. caught in shafting.
Feb. 1	W. J. Porter	Prop.	Gainesville	Gainesville, Ga.	Hand badly crushed between rollers of collar and cuff machine.
" 1	Art. Zimmerman	Engineer	Union City	Morristown, Tenn.	Cannon cracker exploded, tearing palm and thumb.
" 16	A. P. Knowles	....	....	Hammond, Ind.	Hand hurt in collar and cuff machine.
" 20	W. C. Smith	....	....	Cooperst'wn, N,Y.	Acetylene gas explosion. No material injury.
Mar. 7	Colored Man	....	White Cloud	Ashland, Ky.	Killed. Boiler exploded.
" 15	Frank Ross	....	Lock City	Lockport, N.Y.	Severely burned, caused by overturning can of kerosene
" 15	Barbara Stager	Employe	Troy Ldy.	Portland, Ore.	Loss of the use of right arm, hurt while working.
April 1	W. L. Stobart	....	....	Hammond, Ind.	Fell from ladder, severely injured.
" 10	Wm. Kuhn	Prop.	Klondike	Pana, Ill.	Shot through both legs during miners' riot on 10th.
May 15	E. W. Taylor	Prop.	....	Morris, Minn.	Tip taken off from finger, caught in machine.
June 15	W. A. Howald	Prop.	Pearl Stm.	Delaware, O.	Severely injured, caught in shafting.
" 15	Jno. Williams	Driver	Parisian	Racine, Wis.	Thrown from wagon, received injuries eye and nose.
" 20	Frank Thornton	Driver	Chicoffee	Chicoffee, Mass.	Injured, squeezed between wagon and car.
" 26	Edw, Rose	Employe	Roberts	Springfield, Ill.	Found unconscious, seriously injured by grate bar falling.
July 4	E. E. Maher	....	Morris	Morris, Minn.	Painful injury, caused by explosion of fireworks.
" 5	Six	Employes	Whitehead	Indianapolis, Ind,	Seriously injured, two dead, caused by gasoline explosion in building.
" 5	C. H. Brace	Prop.	Brace Bros.	Pittsburg, Pa.	Leg broken and several cuts on head, wheel and wagon collided.
" 8	Three	Employes	Horton's	Tuxedo P'rk, N,Y.	Laundry struck by lightning, employes shocked.
" 8	Girl	Employe	Monarch	New Haven, Conn	Laundry struck by lightning, unconscious for a while.
" 11	Mary Kirk	Employe	Vandeusen's	Troy, N.Y.	Severely injured. hair caught in shafting and scalp torn from head
" 17	Gus Ficklin	Engineer	Moore's	Charleston, Ill.	Leg broken from flying piece of iron.
" 20	Annie Anderson	Employe	Eastern	St. Paul, Minn.	Hand severely burned and bruised, caught in mangle.
Aug, 1	Katie Smith	Employe	Booth's	Joliet, Ill.	Hand badly mashed, fingers amputated.
" 1	....	Employe	Fargo	Fargo, N. D.	Girl lost arm through accident in laundry.
" 15	Mrs. Ward	Employed	Boise Stm.	Boise, Idaho,	Hand mangled, crushing four fingers.
" 15	Jno. Kelley	....	National	Clarkesb'g, W. Va.	Hand badly scalded by hot soap.
" 10	V. P. Commer	Foreman	....	Williamst'wn, Pa.	Killed by boiler explosion.
" 10	Miss Hayes	Employe	....	" "	Badly injured by boiler explosion.
Sept. 15	Bessie Grant	Employe	Banner	Kalamazoo, Mich.	Arm badly injured between rollers.
Oct. 1	M. J. Fahey	Prop.	Troy Ldy.	Pittsfield. Pa.	Hand severely burned, caught between hot rollers.
" 15	Mark Peck	Employe	....	Holly, Mich.	Leg broken.
Nov. 1	J. L. Cusack	Prop.	Park River	Park River, N. D.	Swallowed acid by mistake.
Dec. 2	A. E. Quick	Prop.	Star	Centralia, Ill.	Seriously injured.
" 15	Mary Nelson	Employe	Ideal	Freemont, Neb.	Fell from window, severely injured.
" 15	Frank Ley	Engineer	Hughes	Fresno, Cal.	Carried around shafting. Severely injured.

SOME EMERGENCIES POSSIBLE IN LAUNDRIES.

(Written expressly for the National Laundry Journal)

Just suppose an employe has received a frightful wound in the forearm which is bleeding profusely? "What will you do?" The man may bleed to death before the physician can be summoned; prompt action is absolutely necessary. Promptly tie a bandage around the wounded part between the wound and the body, which would be, in case of the forearm, just above the elbow. The principal point to be remembered in this connection is that an elastic band of any kind is more efficient in controlling hemorrhages than any other one that is non-elastic; and if the laundryman remembers this he can usually find a means for applying it even if he is forced to use his own suspenders.

After the bleeding is somewhat under control, the laundryman should at once turn his attention to the wound itself. Make no attempt to close the wound, especially with ordinary adhesive plaster, as this is beyond the sphere of any one not a surgeon, and likely to result in damage to the patient. Right here it is proper to condemn in no uncertain language the practice of covering a wound, be it ever so small, with an adhesive plaster that has been moistened with the saliva of either the patient or another. This may seem to be a trifling matter, but it is a common practice among persons who should certainly have better judgment and training. The practice is not only a filthy one, but it is also the cause of a great deal of suffering, as the saliva is specially rich in pathogenic germs.

The treatment described for a wound in the forearm may be applied with proper variation to wounds of any part of either extremity. But suppose the wound is in the neck or in some other locality where pressure cannot be applied in the manner mentioned, then what shall be done? It is pressure that we want, and we may obtain it by packing the wound thoroughly with gauze or with clean absorbent cotton, wet in an antiseptic solution, if possible. The underlying principle of the treatment of wounds is pressure, and this we must have, so if neither of these is available, then the laundryman, or some other one designated by him, may place his thumbs in the wound, and thus close the bleeding vessels. This is, however, a dangerous practice, and should not be resorted to when other means are at hand. The laundryman should cleanse his hands before making any attempt to care for the wound beyond the stage already outlined; and this may be hastily done by washing them in soap and water, and then dipping them in strong alcohol. These means are usually at hand and can be utilized quickly; and while they are by no means thorough, they are perhaps all that one can make use of at the moment.

Sunstroke is one of the most common of emergencies to be met with in laundries, and its omission would mar any paper of this nature. If an employe is prostrated by the heat, you can render valuable service both to the individual and to the physician by removing the clothing from the shoulders and chest of the unfortunate person. In fact, it is better to strip him to the waist, place him in a perfectly recumbent position, and have some one pour cold water from a height upon his face, neck and back, while you hastily procure some ice from your own establishment or elsewhere. Break the ice into small pieces, fill a hastily improvised ice-bag and apply to the man's head. You may even add salt to it, thus making a freezing mixture; but it is of utmost importance that such an application should not be allowed to remain in one position longer than a few minutes, for in such an event, the scalp would be liable to be frozen and devitalized, and serious injury result. If you have no time to obtain or make an ice-bag, you can use an empty sack, towel, or such other material as may be near at hand. The patient should be kept perfectly quiet until the physician arrives, and some stimulant may be administered with perfect safety.

Another condition similar to the above is syncope from fright or injury, not of itself very serious, and the circumstances surrounding such emergencies are peculiarly calculated to be the cause of the laundryman's losing his head, so to speak, as they usually occur under circumstances of great excitement. The victim, in a majority of cases, is a woman, and she is, as a rule, promptly surrounded by a number of anxious and curious friends and spectators or both, and the very first impulse is to "lift her up"; but if the thoughtful laundryman is present, he will promptly and strenuously object to this proceeding, and will insist upon keeping her in a perfectly recumbent position, and will at the same time loosen all clothing about the face, neck and chest. The water should be sprinkled with considerable force, or poured from a height if the collapse is complete. But if it be only partial, then these proceedings may be unnecessary and the administration of stimulating inhalations may suffice. The most convenient inhalations are ammonia or amyl nitrite, which may be obtained in an instant from any pharmacy, but these are of little avail if the collapse is complete, as in that case the respiratory movements are almost suspended. While these steps are being taken, the anxious friends and associates and over-curious onlookers should be made to stand back and thus give the patient ample air; and in a majority of cases a few moments will suffice to enable you to note signs of recovery; the physician will arrive and the laundryman's duty will have ended.

The treatment of burns and scalds, although an important topic, needs no long-drawn-out consideration. True, there is very little choice in what one may do in this emergency, but occasionally the laundry proprietor or foreman is called upon to act in such accidents; and he should at least be aware of the fact that he can do but little, and thus avoid embarrassment by reason of his inability to render much aid to the patient.

INDEX.

A

A Fair Day's Work 72
A Good Idea 278
A Good Policy for Local Associations 96, 99
A Laundryman's Talk on Location, Construction, Arrangement and Operation 212, 216
A Questionable Policy 310
A Successful Entertainer 279
A Valuable Water Decision 388
Accidents 458
Accident Damage Suit 389
Acid, or Acidulated Rinse—Should be used, and why 136
Acid and Bleach—Their use in an up-to-date laundry 156, 160
Acids for souring 158
Advance Made in Laundry Business, Methods and Machinery 7
Advertising 307, 328
Advertising—Laundry 317
Advertising—Spasmodic 325
Advertising—Samples of display ads 318, 328
Advertising—Continuous 315
Advertising—Keeping it alive 314
Advertising—Stopping it 314
Agents and Agencies 49, 55
Agents—Is the laundry agent necessary? 49, 53
Agents and Expressage 302
Agencies Licenses 390, 397
Agency Bookkeeping 287
Agencies—Numbering of packages of 288
Air Filter 453
Alkali—Compared with oxalic acid, in possible damage 263
Alkali—Test for it after rinsing 159
Alkali—Its part in the washing process 134
Alkalies—Soap makers 44
Alkalies—Their use in the washing process 261, 270
Alum and Borax (see Borax) 188
Alum—To prevent alkaline water from yellowing goods 271, 272
American Laundry Machinery Abroad 30, 34
American Workwomen, The 66
Ammonia 161
Ammonia as a Fire Extinguisher 341
An Old Game 280
Aniline Blue Formula 141
Arrangement and Construction 213
Associations 96, 111
Associations—A good policy for local 96, 99
Association and Organization—An essay 100, 102
Association Benefits (see Unfriendly Competition) 107, 111
Associations—Interstate 103
Association—Benefit of, in reducing insurance rates 384
Associations, State—An essay 102, 105

B

Barn Man 295
Becoming too Dictatorial 64
Belt—How to put on a new one 410
Belting—How made and cared for 407, 409

Benefit of Association 108, 111
Black Specks—Illustration of how they are formed 255
Black Specks 171, 173, 251, 253
Blankets—Washing and drying 155
Bleach and Acid—Their use in an up-to-date laundry 156, 160
Bleach—As a solvent 135
Bleach—For use in washing, formula 145
Bleach—Recipe for making 39
Bleaching 156, 163
Bleaching—Formula for washing and bleaching 143
Bleaching in cold water—Why 160
Bleaching Jars—With formula for bleach 160
Bleaching Linen with Nitrous Acid 161
Bleaching Woolens 156
Blisters—Why mostly on one side of bosom 181
Blood Stains—To remove 168
Blue 189
Blue—Formula 259
Blue—Why used 136
Bluing—And formula for preparing 141
Bluing—Effect of alkalies and acids 129
Bluing—Effect of warm and cold water 129
Bluing—How to prepare 146
Bluing—Science of its use 171
Boiled Potatoes as a Detergent 229
Boiler 418
Boiler—Scale in 418
Boiler and Engine—Care of 423
Boilers—Why they explode 415
Bookkeeping 287
Borax 188
Borax as a Dirt Starter 161
Borax Starch 189
Breakdown in Engines and Boilers 401
Brought Them to Terms 107
Business—How to build it 218, 220
Business Management 273, 277
Business Success 273

C

Carbonate of Soda—The best laundry alkali 134
Carbonate of Soda—Preferable to caustic soda 264
Card System 283
Care of Delivery Wagon, Horses, etc 293
Cash vs. Credit 296, 301
Caustic Soda—Has little value as a detergent 134
Causticity of Lye for Soft Soaps 40, 42
Chemical Action of Starch 178
Chemicals Used in the Washing Process 141
Chemistry in the Laundry 160
Chicago—Greatest in laundry machinery and supplies 224
Chicago—The laundry machinery and supply center 36
Chlorine—Test for it, after rinsing 157
Class Legislation Against Laundries 397
Clothing Store Laundry Departments 107
Coat Crock 164, 166
Collars and Cuffs—To make stiff 182
Collar Ironing 210, 211
Collars Other than Linen 236
Collars—Rough edges of stand-up 179
Collars—Yellow on one end—Cause of 207
Colored Clothes—To wash 229
Colored Goods—Washing and bleaching 162
Colored Goods and Woolens—Formula for soap for 145
Colored Goods—Washing formula 143
Color Setting 229
Columns—Construction of 334
Commission—Drivers 219
Commission—Wagons 16
Competition 75, 92

Competition—Unfriendly 105
Construction—Columns and partitions 332
Construction and Arrangement 213
Construction—Roof 332
Construction—The elements of fire proof 328
Construction—Use of iron in 330
Co-operative Dividend 64
Correspondence 242, 272
Correspondence 171
Correspondence of the Laundry 277
Cost of Delivering 290, 293
Cost of Electric Power 435
Cost of Labor 209
Cost of a Laundry Plant 218
Cost per Package for Delivering 293
Cost of Power for Small Laundries 412, 414
Cost of Steam Power 434
Cracking Collars—To prevent 205
Credit vs. Cash 296, 302
Cross Reference 349
Cross References 178
Cross References 179
Cross References 173, 175
Cross References 186
Cut Rates (see also Price Cutting) 83, 86

D

Damaged Goods—Paying for 278, 279
Damaged Goods by Employes—Who pays for 63
Damage Suit for Failure to Supply Laundry with Pure Water 388
Dampening 173, 175
Dampening Faults 215
Dampening—Notes and comments on 191
Dampening—One result of too much 207
Dampening—Shirts 241
Dampness in Brick Walls—To prevent 456
Day's Work—Ironing shirts 11
Delivering—Cost of 290, 293
Delivery and Collection by Card System 283
Delivery System 290
Departments—Heads of 16
Deposits, Black—In steam cylinders 403
Does Steam Ignite Woodwork? 197, 198
Domestic Finish 11
Doors and Shutters—Fireproof 334
Doors—Fireproof 338
Drivers—Commission men 219, 220
Drivers' Work—Numbering and accounting for it 289
Drying Clothes by Balloon 198
Dry-Room 240
Dry-Rooms—Fires in 193, 195
Drying-Room 193, 197
Drying—The Philosophy of 196

E

Economy of Electric Over Steam Power 435
Economy of Storage Battery 436
Efficient Delivery System 290
Electric Power in Laundries 434
Electric Power—Its economy over steam 435
Electric Power—Cost of 435
Electrical Production of Ozone 163
Emergencies, and What to Do 462
Employes 56, 74
Employes' Relief Association 65
Employes—Treatment of 56
Employes—Wages 19
Engine—Cylinder lubrication 403
Engine Foundation 421
Engine Room 400, 426
Engineers—Some things they should know 419

Equipment 115, 120
Essays—Association and organization........ 100, 102
Essay—Care of our boiler and engine........ 423
Essay—Cut rates 83, 86
Essays—Is the laundry agent necessary?........ 49
Essay—Ventilation 452
Essay—Sanitation 439
Essay—State association 102, 105
Essay—The use of bleach and acid in an up-to-date laundry.. 156, 160
Exhaust Steam for Heating Water........ 414
Experiments in the Laundry........ 226
Export Trade 29, 32
Express Work 302, 306

F

Faults in Starching and Dampening........ 215
Feed-Water Filters 39
Filling Cracks in Castings........ 402
Filter—Construction of one........ 38
Filter for Air........ 453
Filter—For feed water........ 37
Filtration—Of water 38
Fires—In dry room........ 193, 195
Fire Insurance 342, 384
Fire Insurance—Advantage of federal over state supervision.. 380, 381
Fire Insurance—Averages of losses........ 369
Fire Insurance—Cost of mutual ¼ of 1 per cent........ 368
Fire Insurance—Financiering of a mutual company........ 367, 373
Fire Insurance—Hints of value when insuring........ 381
Fire Insurance—Laundry 357
Fire Insurance—Miscellany of the subject........ 378, 382
Fire Insurance—Over insurance........ 380
Fire Insurance Rates Too High........ 344, 346
Fire Insurance—Relations of insurance to credit........ 378, 380
Fire Insurance—Relations of insurers and insured........ 373
Fire Insurance—Solvency vs. insolvency of companies........ 382, 383
Fire Insurance Statistics from Laundries........ 352, 357
Fire Insurance—The alienation clause........ 374
Fire Insurance—The problem........ 347
Fire Extinguishing 341
Fire Extinguisher—Ammonia 341
Fire Proof Construction—Errors to be avoided........ 336
Fire Proof Construction—The elements of........ 328
Fire Proof Construction—Safe methods to adopt........ 337
Fireproofing Cotton and Linen........ 340
Fire Proof Doors and Shutters........ 334
Fire Proof Doors—Interior........ 338
Fire Proof Structures—Three classes of........ 330
Fire Protection—Dangers of single large floor area........ 379
Fire Preventation 328, 341
Fire Preventation 194, 195
Flannels—Washing 247
Flannels—Washing, drying and ironing........ 154
Flat Work 218
Flat Work—Washing sheets and slips—Formula........ 144
Foreign Laundries 19, 28
Foreman 221
Foreman—Qualifications of........ 15, 17
Formula—Bleach for use in washing........ 145
Formula for Making Blue........ 259
Formula for Making Soap........ 258
Formula—Soap for colored goods and woolens........ 145
Formula—Soap for white goods........ 145
Formulas for Starch for Different Finishes........ 189, 190
Formula for Washing........ 127, 128
Formula for Washing and Bleaching Colored Goods........ 162
Formula—For washing, drying and ironing flannels........ 154
Formulas for Washing in High Grade Laundry........ 147, 148
Formulas for Washing in Low Grade Laundry........ 149, 150
Formula for Washing, Bleaching and Souring........ 255, 256

Formula for Washing Sheets and Slips........................ 144
Formula to Prepare Bluing.. 146
Formula—Washing and bleaching.............................. 143
Formula—Washing colored goods.............................. 143
Formula—Washing tablecloths and napkins.................. 144
Formula—Washing towels 145
Formula—Washing without bleaching........................ 142
Formula—Washroom 142, 146
Fuel 427, 432
434
Fuel—Smokeless artificial 430
Fuel—The waste by scale in boilers.......................... 418
Fuller's Earth—In the laundry—How used.................. 41

G

Gas—How to keep tab on.. 238
Gasoline for Heating Ironing Rolls............................ 205
Good Office System.. 281
Good Prices 93, 96
Good Work—What it is.. 216
Graded Laundries 95
Gum Arabic 189

H

Hand Ironing 212
Hand Laundry—Practical hints........................228, 230
Hard Water 113
Hard Water—Its constituents..........................127, 128
Heat—Its part in the washing process...................... 132
Help—Male vs. Female 65
Help—Remuneration and management of.................. 222
Help—Remuneration—Treatment of........................16, 18
He Pays in Ten Days.. 300
High Grade Washroom Methods; with Formulas........ 147
Holding Goods for Back Debt.................................... 398
Hot Water a Necessity for Good Washing.................. 260
Household Laundry—Practical hints for............228, 230
Household Receipts for Removal of Stains.........167, 169
How Is Your Credit?.. 296
How to Build a Laundry Business....................218, 220
How to Keep Tab on Gas.. 238
How to Select a Location.. 112

I

Insurance Abuses, and Legislative Correction 359
Insurance—Chicago fire of 1871................................ 360
Insurance—Fire 328, 384
Insurance—Fire—Better classification and lower rates for laundries 342
Insurance—National government 361
Insurance—Origin of.. 358
Insurance—Practical benefit of insuring in a body...... 384
Insurance—The mutual system 362
Insurance—The origin of mutual.............................. 363
Investment in Laundry Plants............................12, 24
Ironing 198, 211
Ironing Collars 210, 211
Ironing—Hand 212
Ironing Open Front Shirts.. 204
Ironing Rolls and Boards—Padding same.................. 211
Ironing Rolls—How to keep clean.............................. 206
Ironing Room Equipment.. 119
Ironing Sheets 241
Ironing Shirts 198
Ironing—Times required for various accomplishments.....209, 211
It Oils the Wheels.. 279

K

Keep Track of Your Credit Business.......................... 297

L

Labor—Cost of 209
Labor—What can be accomplished in a certain time.......209, 211
Laundry Accounts—System of.................................. 280
Laundry Associations 96, 111

Laundry Bookkeeping 287
Laundry Brush 170
Laundry Business—Advances made 7
Laundry Business—Evolution of the trade 7
Laundry Business—In America 7, 19
Laundry Equipment 115, 120
Laundry Machinery—Advances made 7
Laundry Methods—Advances made 7
Laundry Advertising 317
Laundry Fire Insurance 357
Laundry Fire Insurance Statistics 352, 357
Laundry Methods, Old and New 208
Laundry Plant—Its cost 218
Laundry Soaps 43
Laundry Trade—How it is gotten 12, 14
Laundry Graded 95
Lint 254, 257
Law 385, 400
Law—A partner's liability 386
Law—Assessment stockholders of insolvent concerns 387
Law—Damage suit for refusal to deliver bundles 388
Law—Debts of consolidating corporations 385
Law—Defense of the laundry against class legislation 397
Licenses for Agencies 390
Licenses—State laws regarding laundry 396, 397
Location 112, 114
Location 212
Location, Choice of a 78
Location—How to select 112
Looking Backward 111
Losses or Damages by Employes—Who pays for 63
Low Grade Washroom Methods 148, 150
Lubrication—Bleach deposits in steam cylinders 403
Lubricators—Care in filling them 411
Lye—Its causticity for soft soaps 42

M

Machine vs. Hand Work 180
Male Help vs. Female 65
Management 14, 16
Management of Laundry Work 220, 222
Management of Help 222
Marking and Sorting 121, 125
Marking of Hotel Linen 123
Measure of a Day's Work at Ironing 190
Measure of a Day's Work Ironing Neckbands 203
Measure of a Day's Work on Shirt Bosoms 200, 204
Mildew—To remove 168, 169
Miscellaneous Laundry Work 212, 241
Mistakes by Beginners 78
Mixed Questions 175
Money May Be Laundered 237

N

Neckbands—How to set up 201
Neckbands—Measure of a day's work, ironing 203
Nitrous Acid as a Bleach 161
Numbering Packages 288, 289

O

Open Front Shirts—Ironing 204
Open Front Shirts—Starching 231
Operating of a Plant 214
Order in the Laundry 60
Ordinances for Licensing Laundries and Agencies 390, 397
Oxalic Acid 163
Oxalic Acid—Compared with alkali, in possible damage 263, 265
Oxalic Acid—How to use 260
Oxalic Acid—How to rinse it out 129
Ozone—Electrical production of 163

P

Padding Ironing Rolls and Boards 211

Paint Spots—To remove ... 168
Partitions—Construction of ... 332
Paying for Damaged Goods ... 276
Petroleum for Washing Purposes ... 154
Phenolphtalien ... 157
Philosophy of Drying ... 196
Piece Work ... 73
Points on Shirt Ironing ... 198
Potash Soap ... 44
Power ... 117
Power—Cost of electric power ... 435
Power—Cost of steam power ... 434
Power, Economy of Electric Over Steam ... 435
Power for Small Laundries—Cost of ... 412, 414
Practical Hints for the Hand and Home Laundry ... 228, 230
Prices and Price Cutting ... 75, 92
Profit Sharing ... 64
Proper Delivery Rigs ... 293
Proprietors of Laundries, and Their Social Status ... 24, 26
Public Wash Houses ... 13
Pulley—To find the horse power of one ... 420

Q

Quality vs. Quantity ... 146, 151
Queer Things that Are Sent to the Laundry ... 124

R

Relief Association, Employes ... 65
Removing Stains ... 164, 170
Remuneration of Help ... 222
Rinsing—To get oxalic acid out ... 129
Roof of Construction ... 332
Rough Edges of Stand-Up Collars ... 179
Route Card System ... 283
Rust Stains—To remove ... 168, 169

S

Salt as a Color Setter ... 229
Sanitation ... 439, 447
Sanitation—An essay ... 439
Scale in Boilers ... 418
Scale in Boilers—Percent of fuel wasted by it ... 424
Scientific Starching Methods ... 184, 190
Scorch Stains—To remove ... 168
Shafting—Size ... 118
Sheets and Slips—Washing formula ... 144
Shirts—Number ironed a day, by hand, and machine ... 9
Shirts—Points on ironing ... 198
Shirts—Starching open fronts ... 231
Shirt Work ... 230
Shirt Work in all Phrases ... 239
Shrinking Woolens ... 155
Smoke Consumption ... 433
Soap ... 43, 47
Soap as a Disinfectant ... 448
Soap for Colored Goods and Woolens—Formula ... 145
Soap—Formula for making ... 258
Soap for White Cotton Goods—Formula ... 145
Soap—Its part in the washing process ... 133
Soap Makers' Alkalies ... 44
Soap—Potash ... 44
Soap—Recipe for making ... 39
Soap Specks—To form them ... 255
Soap—Soft ... 44
Soap—Soluble in benzine ... 48
Soap—Tallow paste, how made ... 47
Soap—The action of ... 137, 140
Social Benefit of Association ... 100, 102
Softening Water ... 39
Soap—Causticity of lye. for ... 42, 44
Solid Colored Goods—Red, black or blue—How to do up ... 183
Some Valuable Hints ... 208, 212

Sorting Room Equipment.... 120
Souring 158
Starch—Chemical action of 178
Starch, Cooking—Open steam vs. jacket kettle.... 176
Starch formula 189
Starching 171, 192
Starching—British, Mongolian and American methods....184, 186
Starching Collars and Cuffs, to Make Stiff 182
Starching—Measure of a day's work.... 187
Starching—Scientific methods 184, 190
Starching New Work.... 187
Starching Open Front Shirts.... 231
Starching—Shirts 239
Starching—Stiffness, smoothness and gloss.... 190
Starching, to Get Stiff Work....182, 183
Starch Room Equipment.... 119
Starch Room Faults.... 215
Starch Room Equipment 186, 187
Starch Room Supplies.... 187
State Associations, Essay....102, 105
Statistics of Causes of Breakdowns in Engines and Boilers.... 401
Statistics on Mutual Fire Insurance—Estimated.... 371
Stealing Packages of Laundry Work 398, 399
Steam Power—Cost of.... 434
Steam Laundry—The room for improvement....14, 18
Steel and Iron Plates—Comparative strength.... 421
Stock Work—As a filler.... 16
Sugar of Lead as a Color Setter.... 229
Sulphate of Lime—To show cause of soap specks.... 255
Storage Battery—Its economy.... 436
Suggestions for Future Improvement in Appliances.... 208
Suggestions—How to build business and manage work and workers 217, 224
Supplies 38, 48
System of Accounting for Amount of Work Done, materials used, etc. 69
System of Keeping Accounts in a Laundry.... 280

T

Tablecloths and Napkins—Washing—Formula.... 144
Tallow Paste Soap—How made 47
Test for Alkali After Rinsing 157
Test for Chlorine, After Rinsing.... 157
The Action of Soap....137, 140
The Insurance Problem.... 347
The Laundry Fire Problem.... 328
The Number of Times Goods Are Handled.... 232
The Office—Books, accounts, etc....278, 289
The Olive Branch....275, 277
Time Required for Various Ironing Accomplishments....209, 211
To Clean Washers.... 153
To Cover Iron Pulleys with Leather.... 401
To Do Up Red, Black or Blue Goods in Solid Colors.... 183
To Make Collars and Cuffs Stiff.... 182
To Render Cotton and Linen Uninflammable.... 340
To Remove Black Specks.... 252
To Restore Colors.... 152
To Set Colors.... 151
Towels—Washing formula 145
Trade Unions—Too dictatorial.... 64
Turpentine and Ammonia.... 229

U

Unfriendly Competition 105, 106
Use of Iron in Construction.... 330

V

Ventilation 449, 458
Vinegar—To save black goods.... 229

W

Wages 19
Wages and Work.... 70

Wages for Ironers, Wages for Collar and Cuff Hands, Finishing, Body Ironing, etc.... 71
Wages for Ironing, Piece Work....73, 74
Wages for Washers and Starchers.... 70
Wages—Statistics 67
Wagon Work 290, 295
Wagons—Delivery—Care of 298
Washing 126, 155
Washing—A chemical operation.... 131
Washing and Bleaching Colored Goods.... 162
Washing and Bleaching—Formula.... 143
Washing and Bleaching—Formula....255, 256
Washing and Drying Blankets.... 155
Washing, Bluing and Bleaching—With formula....140, 146
Washing Colored Clothes.... 229
Washing Colored Goods—Formula.... 143
Washing Delicate Goods.... 151
Washing Flannels 154
Washing Flannels 247
Washing Formula 38
Washing Formula 127, 128
Washing Machines—How to clean.... 153
Washing Sheets and Slips—Formula.... 144
Washing Shirts 240
Washing—Tablecloths and Napkins—Formula.... 144
Washing—To avoid spoiling colors.... 152
Washing—Towels—Formula 145
Washing—What is it?—Why is water or acids used?....130, 137
Washing, Without Bleaching—Formula.... 142
Washing—With petroleum 154
Washman 222
Washman—Qualifications of 18
Washroom Equipment 119
Washroom Formulas 142, 146
Washroom Methods in the Low Grade Laundry....148, 150
Washroom Methods in the High Grade Laundry.... 147
Water 116, 117
Water as Fuel 432
Water—Filtration 38
Water—Hard 113
Water—Hard, its constituents.... 128
Water—Its part in the washing process.... 132
Water Softening 39
Water—Temporary and permanent hardness explained.... 128
Water—Too soft 128
Water—Very hard 114
Waterproof Marking Ink.... 236
Wax 188
Wax—For cleaning rolls and sad-irons—Detrimental.... 207
What Is Good Work?.... 216
What is Washing? Why is Water or Acids Used in the process? 130, 137
Where Care Is Needed.... 151
Where Some Shortages Go.... 126
Who Is to Stand the Loss?.... 63
Wholesale Laundries 83, 84
Why a Successful Laundryman Can Make a Success at Anything.. 274
Wooden Washers—How long they last.... 37
Woolens—Bleaching 156
Woolens and Colored Goods—Formula for soap for.... 145
Woolens—Shrinking 155
Work and Wages.... 70
Wounds—Dressing 462

Y

Yellow Collars—At one end—Cause of.... 297
Yellow Edges 171, 173
Yellowed Goods 270, 272